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A CATALOGUE OF THE FISHES OF BER-
MUDA, WITH NOTES ON A COLLECTION
MADE IN 1905 FOR THE FIELD MU-
SEUM.

BY

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State Fish Culturist of New York.

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Curator of Department.



CHICAGO, U. S. A.
July, 1906.

A CATALOGUE OF THE FISHES OF BERMUDA, WITH NOTES
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INTRODUCTION.

The Bermuda Islands, over three hundred in number, with their outlying reefs are nearly included between the parallels of $32^{\circ} 10'$ and $32^{\circ} 20'$ N., and between the meridians of $64^{\circ} 40'$ and 65° W. from Greenwich. The group is about 600 miles east of Cape Hatteras, and about 1,000 miles from the nearest island of the West Indies. "The line of the outer reef incloses an approximately elliptical area, whose major and minor axes are respectively about twenty-five and about twelve miles in length. The major axis trends about N. 50° E. Only a very small part of the elliptical area thus described is dry land. The dry land is almost confined to the south-easterly side of the ellipse, forming a narrow and broken strip about fifteen miles in length, and nowhere more than three miles in width. The areas of the principal islands are as follows:

	ACRES
"The Main Island	9,725
St. George's Island	706
Somerset Island	702
David's Island	527
Ireland Island	133

"The whole area of dry land in the archipelago is estimated at 12,378 acres.

"The surface of the land is considerably diversified, though nowhere attaining any great elevation. The highest hills are only about 250 feet above the level of the sea.

"In consequence of the small extent of the land both horizontally and vertically, and the extreme porosity of the rock of which it is composed, there are no springs, streams, or lakes of fresh water

in the islands. The rain that falls, where it is not collected in artificial tanks, soaks down into the porous rock until it mingles near the level of the sea with the salt water with which the lower parts of the rocks are saturated. The water in the ponds and marshes, which occupy considerable areas in the less elevated parts of the islands, is always brackish.

"The chain of islands is bordered on the south-east by a fringing reef, distant perhaps a quarter of a mile on the average from the shore. On the north side of the ellipse the line of the reef is nearly continuous; but the only dry land is the little islet, or group of islets, the largest of which, called North Rock, is about eight feet in diameter and about fourteen feet in height.

"The depth of water in the elliptical lagoon inclosed by the outer reef is generally six or eight fathoms, though there are many patches of reef scattered through the lagoon. Outside of the reef the water deepens gradually for a mile or more, the average depth at the distance of a mile being only about twelve fathoms. A little further from the shore a more abrupt descent commences, the depth at a distance of ten miles in every direction except the southwest being from 1,500 to 2,250 fathoms. 'Twenty miles to the southwest-by-west from the Bermudas there are two submerged banks, twenty to forty-seven fathoms under water, showing that the Bermudas are not completely alone, and demonstrating that they cover a summit in a range of heights.' The Challenger expedition obtained a sounding of 2,950 fathoms about 300 miles further on in the same direction, indicating apparently that the range is not of great extent in that direction."— Prof. William North Rice.

The Bermuda islands offer numerous bays and other indentations containing sloping beaches of sand and gravel upon which aquatic animals may readily be taken by seines. In only a few places visited by the writer did low corals interfere with the use of such apparatus of capture. During the course of an expedition lasting from August 18 until November 10, 1905, almost all accessible fishing grounds along the shores and on the outlying soundings were examined with great care and the commercial fishermen aided by bringing in species which they believed to be desirable for the collection.

The collecting outfit included all of the apparatus used by fishermen—seines, dipnets, fish pots, hand lines, spears—besides dredges, trawls and tangles for work from a steamer on the Challenger and Argus banks.

A number of new or rare species were obtained by resounding

ledges of rock or isolated pinnacles under which fishes hide, and especially at low water, with a small, fine-meshed bag seine and then poking under the rocks to frighten the fish into the bag of the net.

A haul seine 7 and 10 feet deep, 2, 1 and $\frac{1}{2}$ inch mesh, with bag of $\frac{1}{2}$ to $\frac{1}{4}$ inch mesh, took fully one-half of all the species secured. The fish pots were found valuable and some fine-meshed wire eel pots of American manufacture were especially useful for small species.

The dredges and trawls, made in St. George's, for use on the "banks" would have added far more to the value of the collections, but for the unfavorable weather encountered during the trip. Both Challenger and Argus banks are rich in animal life and suitable for extensive dredging and trawling. An account of the trip, written by Captain Harry Chester, commanding the tug Gladisfen, is given herewith:

LOG OF THE "CHALLENGER BANK" AND "ARGUS BANK" EXPEDITION IN OCEAN
TUG "GLADISFEN," IN CHARGE OF DR. T. H. BEAN FOR THE FIELD
MUSEUM, ON OCTOBER 12 AND 13, 1905, STARTING
FROM BERMUDA.

9:15 A. M. October 12, 1905; 9:15 A. M., left St. George's, Bermuda, with a crew of 12 men and outfit.

11 A. M. Gibbs Hill Lighthouse bearing north, course W. S. W., wind S. S. W.; fresh wind, and considerable sea and ocean swell. Steering for "Challenger Bank," distance 13 miles from Gibbs Hill Lighthouse.

12:30 P. M. Sounded with lead line in 58 fathoms; 1 mile more, sounded in 30 fathoms, rocky bottom; stopped steamer.

1 P. M. Put a marking buoy with flag overboard in 28 fathoms.

1:15 P. M. Half mile from our flag buoy sounded in 28 fathoms, rocky bottom.

1:20 P. M. Sent large dredge, weighted with 300 lbs. lead, overboard with 60 fathoms of 4-inch Manila rope; fresh breeze, allowed steamer to drift with dredge rope to the bow windlass, for 15 minutes.

1:35 P. M. Hove up dredge with steam windlass, it was empty; having evidently fallen on its back.

1:55 P. M. Put dredge over again.

2:15 P. M. Hove dredge up, and lowered it again; as it had nothing in it, shifted steamer's position to the S. E. $\frac{1}{8}$ of a mile from marking buoy.

2:50 P. M. Sounded 28 fathoms of water; caught from the bottom sharks, red snappers, rockfish, hamlet and hind with hook and line.

3:05 P. M. Hoisted our large dredge up nearly empty again; bottom even, hard, level, and rocky, bringing up small matter such as shells and hydroids, also many nodules.

3:25 P. M. We used our No. 2 dredge to bottom.

3:40 P. M. Hoisted it up with windlass and derrick.

3:50 P. M. Lowered No. 2 dredge again, the steamer backing and dragging dredge out ahead.

4:20 P. M. Hoisted dredge from bottom; made a good catch of crabs, starfish, brittle stars and nodules.

Wind increased to strong breeze, sea rough and steamer jumping heavily into a deep ocean swell.

Fish bite readily on small bait of fish; bottom even and rocky.

The sailors having lines overboard and putting in every spare minute when not handling the dredge. Fish plentiful.

4:25 P. M. No holding ground, and we feel our anchor now let go, with 80 fathoms hawser, dragging along over a pebble and nodule bottom.

4:30 P. M. In 28 fathoms of water, sea getting rougher and steamer's deck wet fore and aft.

Anchor would not hold on bottom with 100 fathoms of hawser out, so that we drifted off soundings.

5:30 P. M. Hove in our cable, and steamed back again for 3 miles, steering S. W. $\frac{1}{2}$ S. from the N. E. edge of soundings, to windward.

6 P. M. Wind S. W. stronger, now upon the middle of the "Challenger Bank," anchored again with largest anchor but again dragged this anchor, steamed to the S. W. 2 miles more, where the anchor caught in 28 fathoms, rock, smooth bottom. Fish biting lively and decks are strewn with them, and sharks plentiful.

10 P. M. Anchor holds in 28 fathoms, same bottom; all over this bank soundings do not vary four fathoms, ranging from 28 to 32 fathoms; rock bottom and teeming with fish.

10 P. M. It now begins to blow hard, the sea is high, barometer unsteady, and steamer rolling and jumping; water shipping

fore and aft and not a dry spot on deck.

Anchor is holding.

Gale increasing during the night with Manila cable, 100 fathoms, out ahead.

Fish bite and keep coming on deck from hook and line.

Flying fish observed flying in long half circles throughout the afternoon and evening about the steamer.

12 midnight. Steamer dragging anchor for half a mile and then gripped anchor again in some rock upon the level bottom, which seems to be overgrown with sea flora.

It blows hard.

Anchor watch, and all hands below for the night.

4 A. M. Oct. 13th, 1905.

Steamer started to drag for a mile over smooth pebble rock bottom and held again.

Anchor watch busy at the anchor' cable, preventing its chafing off at the stem of the steamer; as ship is riding and laboring in a southwest gale, with heavy S. W. sea running choppy and short, in 28 fathoms of water.

8 A. M. Wind S. S. W. strong, having somewhat moderated since early morning. We hove up anchor, having had fish pots out all night on the bottom, but no fish in them.

8 A. M. Started for the "Argus Bank" to S. W. from "Challenger Bank," steering by compass S. W. by S. $\frac{1}{2}$ S.

9:15 A. M. After running for $8\frac{1}{4}$ miles by Patent log, sounded in 30 fathoms on "Argus Bank."

9:30 A. M. Course S. W., sounded in 30 fathoms with two baited hooks on leadline, hauled up 2 rockfish at once, also on another 2-hook line 2 sharks at once.

9:40 A. M. Thirty fathoms, smooth level bottom rocky, hard; hauled in more fish.

9:50 A. M. More fish biting on hook bait; red snappers, rockfish, hamlet, etc. Sea rough and wind blowing fresh. Thirty fathoms water as before and more fish from bottom.

9:50 A. M. Put dredge No. 2 overboard with heavy leads attached; it dragged along bottom but came up empty.

10 A. M. Sent dredge down again with 90 fathoms Manila line; ship drifting about 2 miles per hour with the wind and sea.

10:30 A. M. Brought up pebbles and small nodules, shells, spider crabs, hydroids, corals, etc.

We found the bottom of the "Argus Bank" as level and uniform and rocky as the "Challenger Bank."

10:35 A. M. Put the Manila rope yarn tangle drag overboard with 80 fathoms of line and hauled a great many hydroids and crustaceans.

10:35 A. M. We hauled in a fine lot of fish of the same kinds as on "Challenger Bank" with hook and line.

11:10 A. M. Wind now changing to the west and northward; ugly clouds overcast the horizon and every indication of a northwest gale. We had the Manila rope yarn drag overboard, but the heavy seas would lift and jerk it off the bottom although heavily weighed with 50-lb. leads; we were obliged to heave it on board, with fair results.

Weather warm and thermometer ranging about 75° to 80° throughout the two days.

11:45 A. M. Heavy rain and dark thick weather obscured everything, and ship rolling and thumping into a cross sea.

11:55 A. M. We left "Argus Bank," steering northeast for east end Bermuda; thick weather.

2:30 P. M. Sighted Gibbs Hill Lighthouse, bearing north.

By Ship Log "Argus Bank" to "St. Davids Island Light," east end of Bermuda is 38 miles, N. E. course.

4 P. M. Arrived in St. George's Harbor, all well, with a good catch on board.

CAPTAIN HARRY CHESTER,
Tug "Gladisfen."

The expedition obtained 166 species of fishes of which twelve are believed to be new to science. The new species, with one exception, were described in the Proceedings of the Biological Society of Washington, Feb. 26, 1906. The whole number of recorded species, as will be seen from the subjoined catalogue, is 261.

Only a single species belongs to the fresh-water series, and that is the introduced goldfish. A killifish (*Fundulus bermudæ*) is native to the brackish waters in several of the islands. The rest of the fishes are marine and nearly all are members of the West Indian fauna.

Since the return of the expedition Mr. Louis L. Mowbray has obtained the following species: *Siphostoma jonesi*, *Rhomboplites aurorubens*, *Canthigaster rostratus*, and an undetermined *Pontinus*.

The writer, because of pressure of other work, cannot at present discuss the characteristics and the relations of the Bermuda fishes, but desires to submit a list of the species mentioned by recent writers

and hopes to return to the same field at some future time to obtain materials for an adequate presentation of the subject.

Thanks are due to the people in Bermuda who assisted the Field Museum representatives in many ways during the progress of the expedition and especially to Archdeacon Tucker, Capt. W. E. Meyer, Mr. F. B. Spurling, Mr. William Allen, Miss Allen, Mr. Richard Darrell, and Mr. F. Goodwin Gosling whose generosity will not be forgotten. Mr. Louis L. Mowbray was attached to the expedition during October and part of November and rendered most excellent service.

The expedition brought back many articles for other Departments of the Museum, besides numerous invertebrates and reptiles for the Department of Zoology. The method of collecting the lizard, which is so abundant on Castle Island, was suggested by a David's Island native to a member of the crew of our little steam launch and by him very successfully applied. A tall glass jar having a streak of butter on the inside, below the neck, was stood on the ground. Stones were placed so as to give the lizards easy access to the mouth. They came in large numbers, slipped into the jar and could not escape. In about two hours thirty-three fine examples were taken in a single jar by that plan.

The wood rat, now rather scarce on the islands, was taken in traps set on the trees and baited with bananas of which they are very fond.

It is understood that all the species with which collector and museum's catalogue numbers are associated were obtained by the expedition of 1905. The whole number of recorded species is 261, of which 166 were taken from August to November, 1905, with the exception of a few that were purchased from Mr. L. Mowbray. In this list the first number under the name of a species is the museum catalogue number, the second is the field number of the collector. The classification followed is that of Jordan & Evermann in Bulletin 47. U. S. National Museum.

CATALOGUE OF THE FISHES RECORDED FROM BERMUDA.

I. Family **Branchiostomidae.**

1. **Branchiostoma caribaeum** Sundevall. **AMPHIOXUS.**

4902 No. 566. Flatts, in sand. 38 spec. Sept. 27.
4903 No. 608. Flatts, in sand. 28 spec. Sept. 30.
4904 No. 942. Flatts, in sand. L. Mowbray. 6 spec. July 15, 1904.

2. **Asymmetron lucayanum** Andrews.

4858 No. 943. Near Castle Roads. L. Mowbray. 4 spec. Aug. 16, 1904.

The largest of these is about one inch long.

IX. Family **Ginglymostomidae.**

3. **Ginglymostoma cirratum** (Gmel.).

GOODE, Am. Jour. Sci. Arts, XIV, Oct., 1877, 293.

XI. Family **Galeidae.**

4. **Carcharhinus lamia** (Raf.). **SHARK.**

4937 No. 324. South of Castle Id. Hook. Oct. 4.
621 No. 873. Challenger Bk. Hook. Jaws only. Oct. 12.

5. **Carcharhinus platyodon** (Poey). **PUPPY SHARK.**

BARBOUR, Bull. M. C. Z., XLVI, No. 7, 1905, 111.

6. **Eulamia obscura** (Le S.).

GOODE, Am. Jour. Sci. Arts, XIV, Oct., 1877, 293.

7. **Mustelus canis** (Mitch.). **NURSE SHARK.**

GOODE, Am. Jour. Sci. Arts, XIV, Oct., 1877, 293.

XII. Family **Sphyrnidæ**.8. **Sphyrna zygæna** (L.).

GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 293.

XV. Family **Lamnidæ**.9. **Isurus** sp.GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 293, as *Isuropsis* sp.This is probably *dekayi*, if it belongs to this genus.XXVII. Family **Myliobatidæ**.10 **Aëtobatus narinari** (Euphrasen). WHIP MORAY.

4830 No. 461. The Lane, Hamilton. Oct. 19.

4831 No. 462. The Lane, Hamilton. Oct. 19.

4832 No. 463. The Lane, Hamilton. Oct. 19.

XXXI. Family **Acipenseridæ**.11. **Acipenser** sp. STURGEON.

GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 293.

XXXVII. Family **Cyprinidæ**.12. **Carassius auratus** (L.). GOLDFISH.

GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 293.

XLIII. Family **Anguillidæ**.13. **Anguilla chrysypa** Rafinesque. EEL.

4846 No. 399. The Lane, Hamilton. Oct. 10.

4847 No. 478. The Lane, Hamilton. Oct. 19.

4848 No. 479. The Lane, Hamilton. Oct. 19.

4849 No. 480. East Paget Pond. Spear. Oct. 20.

4850 No. 481. East Paget Pond. Spear. Oct. 20.

XLVII. Family **Leptocephalidae**.14. **Leptocephalus** sp.

GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 293.

LI. Family **Myidae**.15. **Myrophis punctatus** Lütken.

5253 No. 429. Red Bay. Swamp. Hurt. Sept. 28.

5254 No. 932. Castle Harbor. L. Mowbray. July, 1904.

The snout is $\frac{1}{6}$ as long as the head; the eye small, one-half as long as the snout. The angle of the mouth extends behind the eye a distance equal to the length of the snout. The pectoral is about $\frac{1}{6}$ as long as the head, which is about $\frac{1}{3}$ of distance from gill-opening to vent. The dorsal begins a little nearer to the vent than to the gill-opening. The greatest depth of the body is $\frac{1}{3}$ length of head. The body is terete for the most part, and a well-developed caudal fin is continuous with dorsal and anal.

Two individuals were taken, the larger one nearly 12 inches long, the smaller $7\frac{1}{4}$ inches.

LII. Family **Ophichthyidae**.16. **Myrichthys acuminatus** (Gronow). SAND EEL.GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 293, as *Ophisurus longus*.17. **Ophichthys triserialis** (Kaup). SPOTTED SAND EEL.

GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 293.

This is a Pacific coast species, probably not found in Bermuda.

18. **Sphagebranchus anguiformis** (Peters).

BARBOUR, Bull. M. C. Z., XLVI, No. 7, 1905, 112.

LIII. Family **Muraenidae**.19. **Lycodontis funebris** (Ranzani). MORAY; GREEN MORAY.

5165 No. 81. Nonsuch Id. Eel-pot. Sept. 6.

5166 No. 178. Harrington Sd. Fish-pot. Sept. 8.

5167 No. 338. Gwelly Hole, Cooper's Id. Fish-pot. (Brown.) Oct. 5.
 5168 No. 339. Gwelly Hole. Fish-pot. (Brown). Oct. 5.
 5169 No. 358. Near Well Bay, Cooper's Id. Pot (Brown.) Oct. 5.
 5170 No. 382. Flatts. Pot. Oct. 3.
 5171 No. 735. Jones Bay, Cooper's Id. Under rock. (Brown.) Oct. 28.

20. *Lycodontis sanctæ-helenæ* (Günther). SPECKLED MORAY.

5172 No. 19. Ten miles off Ireland Id. Fish-pot. Aug. 25.
 5173 No. 82. Nonsuch Id. Eel-pot. Sept. 6.
 5174 No. 340. Off Castle Id. Hook. Oct. 4.
 5175 No. 350. Castle Harbor, near Nonsuch. Pot. Oct. 5.
 5176 No. 464. Flatts. Oct. 20.

21. *Lycodontis jordani* Evermann and Marsh.

W. I. De Nyse remembers a Bermuda moray in the Coup Aquarium, Broadway and Thirty-fifth Street, in 1876 or 1877, that was yellow, the dorsal edged with black and with white blotches on it. The fish was like *L. jordani* from Porto Rico. The example was about 20 inches long, and was found under a rock.

22. *Lycodontis moringa* (Cuv.) SMALL YELLOW-SPOTTED MORAY.

GOODE, Am. Jour. Sci. Arts, XIV, Oct., 1877, 293, as *Gymnothorax punctatus*.

BARBOUR, Bull. M. C. Z., XLVI, No. 7, 1905, 111.

23. *Lycodontis ocellatus* (Ag.).

JORDAN & EVERMANN, Bull. 47, U. S. N. M., 1896, 399.

An example 12 inches long, taken by Captain Hariott in Bermuda, is now in the New York Aquarium, in spirits.

The serrations on the hind margin of the anterior canines of the lower jaw are very well shown in this specimen. Form slender, the greatest depth, $\frac{3}{4}$ inch, is one-sixteenth of the total length and nearly $\frac{1}{2}$ of the length of head. The eye is as long as the snout and $\frac{1}{6}$ head. The length of the gape of the mouth is nearly $\frac{1}{2}$ head, the angle of the mouth placed far behind the eye. Anterior nostrils in a moderately long tube; posterior not tubular, placed between the eyes, the space between them only $\frac{1}{2}$ eye. Five enlarged canines in the front of each jaw; the sides of the upper jaw with about 7 and of the lower

jaw with 8 or 9 smaller teeth. The vomer has a raised crest without evident teeth. Distance of gill opening from vent about twice head. Dorsal beginning slightly in advance of gill opening.

Color in spirits, chocolate-brown; the belly and under surface of head pale; body profusely covered with whitish spots, none of them more than $\frac{1}{2}$ eye. Dorsal fin with about 18 dark blotches surrounding whitish areas; anal with a smaller number of similar dark markings associated with light spaces, the dark markings forming an almost continuous margin.

24. Echidna catenata (Bloch).

GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 293.

LVI. Family **Elopidae**.

25. Tarpon atlanticus (C. & V.).

GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 293, as *Megalops thrissoides*.

LVII. Family **Albulidae**.

26. Albula vulpes (Linnæus). GRUBBER.

4833	No. 148.	Well Bay, Cooper's Id.	4 young.	Seine.
		Sept. 5.		
4834	No. 161.	Nonsuch Bay.	5 young.	Seine. Sept. 4.
4835	No. 515.	Flatts.	Seine.	Sept. 27.
4836	No. 677.	Nonsuch Bay.	Seine. 2 young.	Sept. 26.
4837	No. 837.	Ely's Harbor.	Seine. 2 young.	Sept. 20.

LXI. Family **Clupeidae**.

27. Opisthonema oglinum (Le Sueur). HERRING.

5255	No. 67.	Hamilton Harbor.	W. Allen.	Aug. 28.
5256	No. 300.	Flatts.	2 spec.	Seine. Sept. 8.
5257	No. 313.	Shelly Bay.	2 spec.	Seine. Sept. 9.
5258	No. 569.	Hunt's Bay, Port Royal.	2 spec.	Seine. Sept. 21.
5259	No. 838.	Ely's Harbor.	Seine.	Sept. 20.

28. **Sardinella anchovia** (C. & V.). ANCHOVY.

5300 No. 195. Flatts. Seine. D. 16; A. 18. Sept. 7.
 5301 No. 558. Ruth's Bay, St. David's. Seine. Oct. 4.
 5302 No. 759. The Reach, St. George's. Seine. 6 young. Oct. 23.
 5303 No. 811. Long Bird Id., south shore. Oct. 24.

29. **Sardinella humeralis** (C. & V.). PILCHARD.

5304 No. 58. Hungry Bay. 3 young. Dip-net. Aug. 29.
 5305 No. 113. Well Bay, Cooper's Id. 3 spec. Seine. Sept. 6.
 5306 No. 147. Well Bay. 10 spec. Seine. Sept. 5
 5307 No. 672. Soldier Bay, Old Ferry. Seine. Young. Sept.
 23.
 5308 No. 749. Smith's Id., St. George's. Seine. Young. Oct.
 17.
 5309 No. 854. Great Bay, St. David's. Seine. 2 spec. Sept.
 18.

30. **Sardinella macrophthalmus** (Ranzani). PILCHARD.

5310 No. 322. Shelly Bay. Seine. 2 spec. (many taken).
 Sept 9.

LXII. Family **Engraulididae**.31. **Stolephorus chœrostomus** (Goode). HOGMOUTH FRY; FRY.

5419 No. 60. Hungry Bay. 10 spec. Aug. 29-30.
 5420 No. 152. Well Bay, Cooper's Id. Sept. 5.
 5421 No. 526. Nonsuch Bay. Seine. 18 spec. Oct. 4.
 5422 No. 669. Wellman Bay. Seine. 6 spec. Sept. 23.
 5423 No. 741. Jones Bay, Cooper's Id. Under rocks. Oct 28.
 5424 No. 827. Red Bay, St. David's Id. Oct. 27.

LXVIII. Family **Synodontidae**.32. **Synodus fœtens** (Linnaeus). SNAKE FISH.

5425 No. 363. Long Bay, Somerset. Seine. Sept. 22.
 5426 No. 458. Cove near Hunt's Bay, Port Royal Id. Seine
 Sept. 21.
 5427 No. 710. Packward's Bay. Seine. Sept. 23.

5428 No. 844. Ely's Harbor. Seine. Sept. 20.
 5429 No. 859. Shelly Bay. Seine. Sept. 19.
 5430 No. 877. Hamilton. Fred Ingham. Nov. 6.

33. *Synodus intermedius* (Agassiz). SNAKE FISH.

5431 No. 127. Pitts Bay, Hamilton. Maxwell Allen. Sept. 12.
 5432 No. 186. The Flatts. Seine. 2 spec. Sept. 7.
 5433 No. 199. The Flatts. Seine. Sept. 8.
 5434 No. 308. Spanish Point. Seine. 2 spec. Sept. 9.
 5435 No. 309. Shelly Bay. Seine. Sept. 9.
 5436 No. 457. Cove near Hunt's Bay, Port Royal Id. Seine. Sept. 21.
 5437 No. 516. Nonsuch Bay. Seine. Oct. 4.
 5438 No. 582. Flatts. Seine. 2 spec. Sept. 20.
 5439 No. 595. Port Royal Bay. Seine. Young. Sept. 21.

34. *Synodus saurus* (L.). SNAKE FISH.

GOODE, Am. Jour. Sci. Arts, XIV, 1877, 293, as *Synodus lacerta*.
 BARBOUR, Bull. M. C. Z., XLVI, No. 7, 1905, 113.

35. *Trachinocephalus myops* (Forster). SNAKE FISH.

5463 No. 455. Cove near Hunt's Bay, Port Royal Id. Seine. Sept. 21.
 5464 No. 689. Long Bay, Cooper's Id. Seine. Sept. 25.

XCII. Family **Pœciliidæ.**

36. *Fundulus bermudæ* Günther. MULLET.

5027 No. 1. Paget East. Swamp. 7♂, 8♀, 8 juv. Aug. 20.
 5028 No. 101. Paget East. Swamp. Many. Sept. 10.
 5029 No. 583. Stocks Point, St. David's Id. Many. Sept. 29.

XCIV. Family **Esocidæ.**

37. *Tylosurus acus* (Lacépède). HOUND.

5471 No. 359. Flatts. In pot. Very large.
 5472 No. 86. Well Bay, Cooper's Id. Sept. 6.
 5473 No. 132. Gibbet Id. Seine. Sept. 8.
 5474 No. 422. Near Red Bay, St. David's Id. Seine. Oct. 23.

38. *Tylosurus ardeola* (C. & V.). HOUND.

39. **Tylosurus raphidoma** (Ranzani).

BARBOUR, Bull. M. C. Z., XLVI, No. 7, 1905, 113.

40. **Athlennes hians** (C. & V.). HOUND.

4878 No. 130. Gibbet Id. 7 spec. Seine. Sept. 8.
4879 No. 798. The Reach, St. George's. Seine. Oct. 23

XCV. Family **Hemirhamphidæ.**

41. *Hyporhamphus roberti* (C. & V.). GAR.

42. Hyporhamphus unifasciatus (Ranzani). GAR.

5096 No. 112. Well Bay, Cooper's Id. 2 spec. Seine. Sept. 6.
 5097 No. 123. Well Bay and Nonsuch Id. 6 spec. Sept. 3.
 5098 No. 155. Well Bay. Young. Seine. Sept. 5.
 5099 No. 163. Nonsuch Bay. 2 spec. Seine. One injured Sept. 4.
 5100 No. 193. Flatts. Young. Seine. Sept. 7.
 5101 No. 603. Off north shore, at surface, near White's Flat Shoal. Very young. Oct. 6.
 5102 No. 812. Long Bird Id., south shore. 2 spec. Oct. 24.
 5103 No. 852. Ely's Harbor. Seine. Young. Sept. 20.

43. *Hemirhamphus brasiliensis* (Linnæus). GAR.

5051 No. 311. Smith's Cove, Hamilton. Seine. Sept. 9.
5052 No. 361. Long Bay, Somerset. Seine. Sept. 22.
5053 No. 924. Hamilton Harbor. Nov. 9.

XCVII. Family **Exocetidae**.44. **Exocetus furcatus** Mitchell. FLYING FISH.

5268 No. 923. Hamilton Harbor. Winter. Mr. Goodwin Gosling.

This individual is $3\frac{1}{2}$ inches long to base of caudal. There are two black barbels on the chin, shaped like a half-leaf, and each of them nearly as long as the eye. D. 14; A. 9; scales about 50; 26 rows before dorsal.

5269 No. 400. Flatts. Two young, under *Sargassum*. Oct. 10.

These young examples have five golden bands on the body and a golden blotch at caudal base.

45. **Exocetus bahiensis** Ranz. FLYING FISH.

GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 292.

46. **Exocetus lineatus** C. & V.

GOODE, Bull. U. S. N. M., v, 1876, 76.

47. **Exocetus rondeletii** C. & V. FLYING FISH.

GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 293.

48. **Exocetus rufipinnis** C. & V. FLYING FISH.

GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 293, as *Exocetus rufipinnis*.

49. **Exonautes exsiliens** (Müller). BUTTERFLY FISH; FLYING FISH.

GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 292, as *Exocetus exsiliens*.

BARBOUR, Bull. M. C. Z., XLVI, No. 7, 1905, 114.

C. Family **Aulostomidae**.50. **Aulostomus maculatus** Val.

An example 23 inches long, taken by Louis Mowbray, August 25, 1893, at One Gun, North Shore, St. George's Id., by hook and line, is now in the Bermuda Natural History Society's collection at Hamilton. The specimen agrees with the description of *Aulostomus maculatus* in Bull. 47, U. S. Nat. Mus.

CI. Family **Fistulariidae**.51. **Fistularia tabacaria** Linnæus.

5493 No. 1096. Off North Shore, St. George's Id. On hook.

CII. Family **Macrorhamphosidae**.52. **Macrorhamphosus scolopax** (L.).GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 291, as *Centriscus scolopax*.CIII. Family **Syngnathidae**.53. **Siphonostoma elucens** (Poey). DUCK FISH.

5338 No. 561. Ruth's Bay. Seine. ♀. Oct. 4.

D. 21, on 1+5 rings; rings 17+33.

5344 No. 704. Packward's Bay, Old Ferry Road. Sept. 23.

D. 25, on 1+5 rings.

54. **Siphonostoma mackayi** Swain & Meek. DUCK FISH.

5345 No. 128. Off mouth of Flatts, under seaweed. Sept. 9.

5346 No. 159. Nonsuch Bay. Seine. Sept. 4.

5347 No. 365. Long Bay, Somerset. Seine. Sept. 22. D. 30.

5339 No. 564. Long Bird Id. Seine. ♂. Spent. Sept. 30.

D. 31, on 3+5½ rings; rings 17+32.

5340 No. 598. Flatts. ♂. Spent. Oct. 3.

D. 29, on 2+6 rings; rings 17+36.

5341 No. 674. Wellman Bay, St. George's. Seine. 4 spec. Sept.

23.

D. 30, on 2+6 rings; rings 18+35. One male with eggs in pouch.

5348 No. 714. Cable Bay, Tucker's Town. Seine. Oct. 26.

5342 No. 752. The Reach, St. George's. Seine. ♀. Oct. 23.

D. 28, on 2+6 rings; rings 18+34.

5343 No. 753. The Reach, St. George's. Seine. Oct. 23.

D. 28, on 2+6 rings; rings 18+37.

5349 No. 775. Cooper's Id., west side. Oct. 25.

5350 No. 809. Long Bird Id., south shore. Oct. 24.

D. 31, on 2+6 rings.

5351 No. 913. The Lane, Hamilton. Seine. Nov. 7.

55. **Siphostoma dendriticum** Barbour.

BARBOUR, Bull. M. C. Z., XLVI, No. 7, 1905, 115, pl. 1.

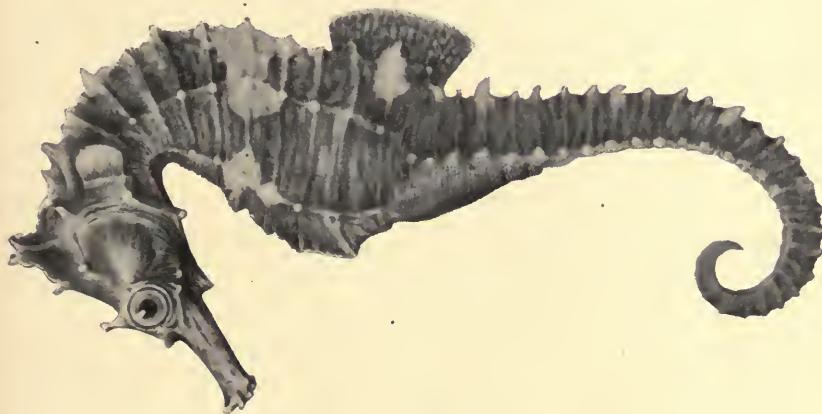
56. **Siphostoma jonesi** (Gthr.).GOODE, Am. Jour. Sci. Arts, XIV, Oct., 1877, 291, as *Syngnathus jonesii*.

BARBOUR, Bull. M. C. Z., XLVI, No. 7, 1905, 115.

57. **Siphostoma pelagicum** (Osbeck).

GÜNTHER, Shore Fish. Chall., 1880, 11.

BARBOUR, Bull. M. C. Z., XLVI, No. 7, 1905, 115.

FIGURE 1. *HIPPOCAMPUS BRUNNEUS* Bean.58. **Hippocampus brunneus** Bean. SEA HORSE.

BEAN, Proc. Biol. Soc. Wash., xix, Feb. 26, 1906, 32.

5494 No. 1099. Long Bird Id. L. Mowbray. Aug. 29, 1904.

This is a male with pouch recently emptied. D. 18, on 3 body and 1 caudal rings; rings 11+35. Eye $2\frac{1}{2}$ in snout, 6 in head. Greatest depth of body about $\frac{3}{4}$ head. Head as long as the body. Coronet moderate, with 5 spines; supraocular spines well developed; a smaller spine between the nostrils; a pair of spines at the throat; a spine in front of the lower part of the pectoral base and one at the gill opening; a pair at the sides of the nape and a spine on the ridge of the nape; most of the body and tail rings are furnished with blunt spines; about 7 or 8 pairs somewhat enlarged, alternating with shorter pairs. Length of dorsal base equal to snout. Longest dorsal ray $\frac{1}{2}$ snout.

Color in spirits, chocolate; a triangular whitish blotch immediately behind the head, its greatest width $\frac{1}{2}$ snout; a larger blotch resem-

bling an hour-glass on the body, principally on the sixth and seventh body rings, extending entirely around; eight narrow whitish bands across the back, the first at the middle of dorsal base, none of these reaching below the median line.

The description of color of *Hippocampus hudsonius*, in Bull. 47, U. S. Nat. Mus., 777, apparently relates to this species, but not to the *H. hudsonius* of De Kay.

59. *Hippocampus hudsonius* De Kay. SEA HORSE.

- 5064 No. 392. Flatts. ♂. D. 19. Sept. 28.
- 5065 No. 715. Cable Bay. Seine. D. 19. Sept. 26.

60. *Hippocampus punctulatus* Guichenot. SEA HORSE.

- 5495 No. 1100. Coot Pond. L. Mowbray. D. 18. Sept. 30, 1904.

61. *Hippocampus stylifer* Jordan & Gilbert. SEA HORSE.

- 5066 No. 691. Flatts. Seine. Sept. 25.

62. *Hippocampus hippocampus* (L.). SEA HORSE.

GOODE, Am. Jour. Sci. Arts. XIV, Oct., 1877, 291, as *Hippocampus antiquorum*.

CVI. Family **Atherinidae.**

63. *Atherina harringtonensis* Goode. BLUE FRY.

- 4859 No. 99. The Flatts. Seine. Sept. 8
- 4860 No. 118. Nonsuch Id. and Well Bay. Seine. Sept. 3.
- 4861 No. 138. Hayward's Bay, St. David's Id. Sept. 6.
- 4862 No. 151. Well Bay, Cooper's Id. Many. Seine. Sept. 5.
- 4863 No. 190. Flatts. 4 spec. Seine. Sept. 7.
- 4864 No. 370. Long Bay, Somerset. 4 spec. Seine. Sept. 22.
- 4865 No. 459. Near Hunt's Bay, Port Royal Id. 2 spec. Seine. Sept. 21.
- 4866 No. 527. Nonsuch Bay. Seine. 4 spec. Oct. 4.
- 4867 No. 538. Nonsuch Bay. Seine. 5 spec. Sept. 26.
- 4868 No. 552. Tucker's Town Cove. Seine. 2 spec. Sept. 29.
- 4869 No. 565. Long Bird Id. Seine. Sept. 30.
- 4870 No. 577. Hunt's Bay, Port Royal. Seine. 2 spec. Sept. 21.
- 4871 No. 670. Soldier Bay, Old Ferry. Seine. 6 spec. Sept. 23.

4872 No. 711. Packward's Bay. Seine. 4 large. Sept. 23.
 4873 No. 748. Smith's Id., St. George's. 3 spec. Oct. 17.
 4874 No. 760. The Reach, St. George's. Seine. 6 spec. Oct. 23.
 4875 No. 776. Castle Harbor. 33 spec. Oct. 18.
 4876 No. 810. Long Bird Id., south shore. 14 spec. Oct. 24.
 4877 No. 860. Shelly Bay. Seine. 7 spec. Sept. 19.

64. *Menidia menidia* (L.). BLUE FRY.

BARBOUR, Bull. M. C. Z., XLVI, No. 7, 1905, 116. Flatts, exceedingly common, D. 4+9; A. 1+22.

65. *Menidia notata* (Mitch.).

BARBOUR, Bull. M. C. Z., XLVI, No. 7, 1905, 116. Based on specimen in M. C. Z., No. 18246.

CVII. Family *Mugilidae*.

66. *Mugil brasiliensis* Agassiz. MULLET.

5208 No. 315. Shelly Bay. Seine. Sept. 9.

67. *Mugil curema* C. & V. MULLET.

5206 No. 64. Hamilton Harbor. 10 young. Aug. 28.
 5207 No. 65. Hungry Bay. Young. Aug. 30.
 One of these has only 2 anal spines.
 5209 No. 115. Well Bay, Cooper's Id. 2 young. Sept. 6.
 5211 No. 502. Doe's Rock. Tide pool. Young. Oct. 26.
 5212 No. 746. Smith's Id., St. George's. Oct. 17.

68. *Mugil trichodon* Poey. MULLET.

5210 No. 172. Hayward's Bay. Seine. Sept. 6.
 5215 No. 316. Shelly Bay. Seine. Sept. 9.
 5205 No. 553. Tucker's Town Cove. Seine. Young. Sept. 29.
 5213 No. 817. Long Bird Id., south shore. Young. Oct. 24.
 5214 No. 842. Ely's Harbor. Seine. 2 spec. Sept. 20.

CVIII. Family *Sphyraenidae*.

69. *Sphyraena barracuda* (Walbaum). BARRACUDA.

5414 No. 341. Flatts. Seine. Oct. 4.
 5415 No. 353. Cable Bay, Tucker's Town. Seine. Sept. 25.

70. **Sphyræna borealis** De Kay. SENNET.

5416 No. 546. Nonsuch Bay. Seine. Sept. 29.
 5417 No. 841. Ely's Harbor. Seine. Scales. 120. Sept. 20.

71. **Sphyræna picudilla** Poey. SENNET.

5418 No. 517. Nonsuch Bay. Seine. Oct. 4.

72. **Sphyræna sphyraena** (L.).

GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 292, as *S. sphyraena*.
 BARBOUR, Bull. M. C. Z., XLVI, No. 7, 1905, 116.

CXV. Family **Holocentridae**.73. **Holocentrus ascensionis** (Osbeck). SQUIRREL.

5067 No. 11. Hungry Bay. Aug. 24.
 5068 No. 23. 10 miles off Ireland Id. Fish-pot. Aug. 25.
 5069 No. 87. Nonsuch Id. Eel-pot. Sept. 3.
 5070 No. 97. The Flatts. Young. Seine. Sept. 8.
 5071 No. 106. Well Bay, Cooper's Id. Seine. Sept. 3.
 5072 No. 143. Hayward's Bay. 3 young. Seine. Sept. 6.
 5080 No. 318. Smith's Cove, Hamilton. Young. Sept. 9.
 5073 No. 357. Great Shoal, Castle Harbor. Pot. Sept. 29.
 5074 No. 378. Long Bay, Somerset. Young, Seine. Sept. 22.
 5075 No. 650. Old Ferry, St. George's. Seine. Sept. 23.
 5076 No. 781. Great Bay, St. David's Id. Seine. 6 young.
 Sept. 18.
 5077 No. 843. Ely's Harbor. Seine. Young. Sept. 20.
 5078 No. 914. Hungry Bay. Seine. Nov. 7.

74. **Holocentrus meeki** Bean.

BEAN, Proc. Biol. Soc. Wash., xix, Feb. 26, 1906, 31.

5079 No. 144. Hayward's Bay, St. David's Id. Seine. Sept. 6.
 A squirrel-fish of the small-scaled group represented by *H. ascensionis* was seined in Hayward's Bay, St. David's Id. Only two young individuals were taken. From *H. ascensionis* the species can be at once distinguished by its low dorsal and anal rays, its small eye, and its equal caudal lobes, as well as by other characters.

D. xi, 14 to 15; A. iv, 10; scales 4-54 to 55-7. The head is $\frac{1}{2}$ of total length to base of middle caudal rays. The maxilla extends to the perpendicular through the front of the eye. The eye is $\frac{2}{3}$ of

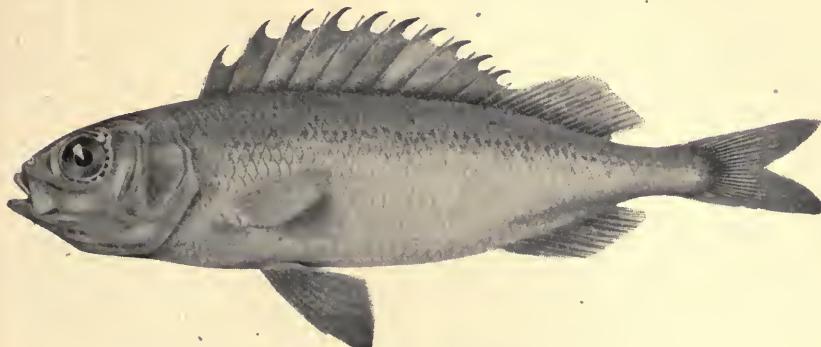


FIGURE 2. HOLOCENTRUS MEEKI Bean.

the length of the head. Preopercle with a strong spine at the angle, not reaching to the edge of the subopercle. Opercle with two very small flat spines, not $\frac{1}{2}$ as long as the eye. Preorbital, preopercle, interopercle, subopercle, and opercle denticulated. Scales of the body minutely denticulated, having about 14 spines on the posterior margin.

Depth of body $\frac{1}{4}$ of total length to base of middle caudal rays. Caudal peduncle very slender, its least depth only $\frac{1}{4}$ length of head. The pectoral is about $\frac{3}{5}$ as long as the head and extends to the 16th series of scales. The ventral is $\frac{2}{3}$ as long as the head, and ends far from the vent. The anal base is $\frac{1}{2}$ as long as the head. The longest dorsal spine is $\frac{1}{2}$ as long as the head; the longest soft ray is equal to the longest spine, and when laid back does not extend to the end of the last ray. The longest anal ray is scarcely equal to the longest of the dorsal rays. The first anal spine is minute, the second spine is about $\frac{2}{3}$ as long as the eye, the third and longest is little more than $\frac{1}{3}$ as long as the head, the fourth is slenderer and shorter than the third.

Color in spirits: body above lateral line pale brown, below lateral line shining silvery; all but top of head silvery; caudal peduncle tinged with purplish; membrane of spinous dorsal blackish; other fins all pale, except caudal, which shows traces of dusky on the lobes; iris pale.

Length of the two individuals described, three inches and two and three-fourths inches respectively to base of middle caudal rays.

75. *Holocentrus siccifer* Cope.

\equiv *H. puncticulatus* BARBOUR; *H. tortugae* JORDAN & THOMPSON.

5496 No. 497. Nonsuch Id. Eel-pot. 3 young. Sept. 18.

D. xi, 13; A. iv, 9; scales 4-43-8.

D. xi, 13; A. iv, 9; scales 4-43-8.

D. xi, 13; A. iv, 9; scales 4-45-8; length $1\frac{3}{4}$ inches.

5497 No. 734. Jones Bay, Cooper's Id. Under rock. 7 spec. Oct. 28.

D. xi, 13; A. iv, 9; scales 4-44-7.

D. xi, 13; A. iv, 9; scales 4-43-8.

D. xi, 13; A. iv, 9; scales $3\frac{1}{2}$ -43-8.

D. xi, 13; A. iv, 9; scales $3\frac{1}{2}$ -44-8.

D. xi, 13; A. iv, 9; scales 4-42-8.

D. xi, 14; A. iv, 9; scales 4-44-8.

D. xi, 13; A. iv, 10; scales 4-42-8.

5289 No. 763. Jones Bay. Under rocks. Oct. 25.

D. xi, 13; A. iv, 9; scales 4-42-7.

4906 No. 771. Cooper's Id., west side. 6 spec. Oct. 25.

D. xi, 13; A. iv, 9; scales 4-44-7.

D. xi, 13; A. iv, 9; scales 4-44-7.

D. xi, 13; A. iv, 9; scales 4-41-7.

D. xi, 13; A. iv, 9; scales 4-43-7.

D. xi, 14; A. iv, 9; scales $3\frac{1}{2}$ -43-7.

D. xi, 13; A. iv, 9; scales 4-44-7.

5081 No. 931. The Reach, St. George's. L. Mowbray. Sept.

14, 1904.

Specimen in New York Aquarium. Locality: Bermuda.

Length, to caudal base, 4 in.

Depth $1\frac{1}{16}$ in.

Least depth caudal peduncle $\frac{5}{16}$ in.

Head $1\frac{5}{16}$ in.

Eye $\frac{8}{16}$ in.

Snout $\frac{4}{16}$ in.

Maxilla to below middle of eye.

First dorsal spine $\frac{8}{16}$ in.

Second dorsal spine $\frac{9}{16}$ in.

Third dorsal spine $1\frac{0}{16}$ in.

Fourth dorsal spine $1\frac{0}{16}$ in.

Eleventh dorsal spine $\frac{1}{16}$ in.

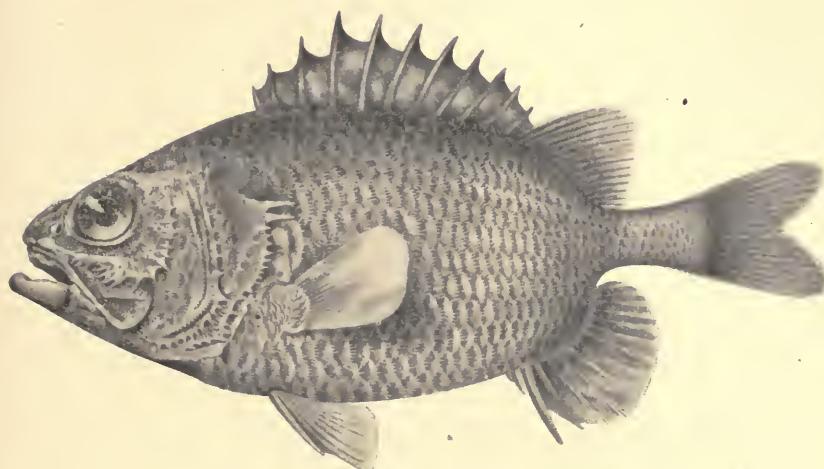
Longest ray of 2nd dorsal (not perfect). $1\frac{1}{16}$ in.

Third anal spine $1\frac{5}{16}$ in.

Fourth anal spine $\frac{9}{16}$ in.

D. xi, 13; A. iv, 9; scales 3-45-8.

Color, in spirits: A black blotch as long as the eye on spinous dorsal behind first to third spines. Eye dark bluish. Body pale yellowish brown, with faint longitudinal streaks along rows of scales.

FIGURE 3. *PLECTRYPOPS RETROSPINIS* (Guichenot).76. *Plectrypops retrospinis* (Guichenot).

5280 No. 933. East End, St. George's, 12 fathoms. L. Mowbray.
Nov. 28, 1903.

Mr. Mowbray took seven additional specimens in March and April, 1906, which were cast ashore on Cooper's Island and St. David's Island.

The excellent figure of this rare species will show the strong characters by which it may readily be distinguished from other members of its family.

CXVII. Family **Mullidae.**77. *Upeneus maculatus* (Bloch). GOAT FISH.

5479 No. 4. Hungry Bay. 2 spec. Aug. 24.
 5480 No. 27. Ten miles off Ireland Id. 2 spec. Fish-pot.
 Aug. 25.
 5481 No. 62. Hungry Bay. Young. Seine. Aug. 30.
 5482 No. 406. Well Bay, Cooper's Id. Eel-pot. Oct. 5
 5483 No. 416. Well Bay, Cooper's Id. Seine. Sept. 26.
 5484 No. 470. Jones Bay, Cooper's Id. 4 spec. Seine.
 Sept. 25.
 5485 No. 508. Wescott Bay. Seine. Sept. 25.
 5486 No. 532. Nonsuch Bay. Seine. Sept. 25.

5487 No. 548. Nonsuch Bay. Seine. 8 spec. Sept. 29.
 5488 No. 655. Well Bay, Cooper's Id. Seine. Sept. 26.
 5489 No. 662. Well Bay, Cooper's Id. Seine. 13 spec. Sept. 26.
 5490 No. 682. Long Bay, Cooper's Id. Seine. Sept. 25.
 5491 No. 833. Ely's Harbor, Seine. Sept. 20.

78. Upeneus martinicus C. & V. GOAT FISH.

GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 292, as *Mulloidess flavovittatus*.

CXVIII. Family **Scombridae**.

79. Thunnus thynnus (L.).

GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 291, as *Orcynus thynnus*.

80. Gymnosarda alleterata (Raf.). MACKEREL.

GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 291, as *Orcynus allieratus*.

81. Auxis thazard (Lac.). FRIGATE MACKEREL.

GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 291, as *Auxis rochei*.

CXIX. Family **Gempylidae**.

82. Promethichthys prometheus (C. & V.). CAT FISH.

GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 291, as *Thrysites prometheus*.

CXXIII. Family **Xiphiidae**.

83. Xiphias gladius L. SWORD FISH.

GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 291.

CXXV. Family **Carangidae**.

84. Caranx bartholomaei C. & V. JACK.

4919 No. 507. Wescott Bay. 5 young. Seine. Sept. 25.

4920 No. 539. Nonsuch Bay north side. "Green Jack." Sept. 26.
 4921 No. 718. Cable Bay, Tucker's Town. Seine. Sept. 26.
 4922 No. 834. Ely's Harbor. Seine. "Green Jack." Sept. 20.

85. *Caranx chrysos* (Mitch.). GWELLY.

4923 No. 547. Nonsuch Bay, Seine. Sept. 29.

86. *Caranx guara* (Bonnaterre). GWELLY.

4915 No. 333. Off north shore from Flatts. Hook. Oct. 6.
 2 D. i, 27; A. i, 22; scutes about 27; 26 gill rakers below angle on first arch, longest $\frac{1}{3}$ snout; whole number of rakers about 40. No trace of teeth on vomer, palate, or tongue. Lateral line about 115, including scutes. The ventral reaches to middle of vent; the pectoral to above seventh ray of anal. Lower jaw included within upper; maxillary not quite reaching to vertical through front of eye; eye 6 in head, $2\frac{1}{2}$ in snout; head 3 in total to base of middle caudal rays; depth equal to head. Longest ray of soft dorsal and anal equal and $3\frac{1}{2}$ in head. Caudal lobes equal, slightly shorter than head.

A very marked opercular spot; no spot on the pectoral. Iris pale yellow. Throat and adjacent region behind last gill very dark brown, nearly black.

87. *Caranx latus* Agassiz. JACK.

4928 No. 160. Nonsuch Bay. Seine. Sept. 4.
 D. VIII, 1, 20; A. I, 17; scutes 34.
 4929 No. 194. Flatts. 15 spec. Seine. Sept. 7.
 4930 No. 371. Long Bay, Somerset. 3 spec. Seine. Sept. 22.
 4931 No. 556. Flatts. 3 Young. Oct. 5.
 4932 No. 575. Hunt's Bay, Port Royal. 4 young. Seine. Sept. 21.
 4933 No. 591. Port Royal Bay. Seine. 2 young. Sept. 21.
 4916 No. 652. Old Ferry, St. George's. Seine. Sept. 23.
 4917 No. 679. Nonsuch Bay. Seine. 3 young. Sept. 26.
 Scutes about 38.
 4918 No. 713. Packward's Bay. Seine. Young. Sept. 23.
 4924 No. 717. Cable Bay, Tucker's Town. Seine. Sept. 26.
 4934 No. 758. The Reach, St. George's. Seine. Young. Oct. 23.
 4925 No. 805. The Reach, St. George's. Seine. Oct. 23.
 D. VIII, 1, 21-22; A. 11-1, 17; scutes 36-38; gill rakers 18 below.
 4926 No. 813. Long Bird Id., south shore. Young. Oct. 24.

4927 No. 836. Ely's Harbor. Seine. 2 spec. Sept. 20.
 4935 No. 875. Hamilton. Fred Ingham. Nov. 6.

88. *Caranx ruber* (Bloch).

4936 No. 77. Nonsuch Id. Young. Aug.

89. *Caranx caballus* (Gthr.).

GÜNTHER, Rep. Shore Fishes Chall., 1880, 10.

90. *Decapterus punctatus* (Agassiz). ROBIN.

4965 No. 135. Gibbet Id. 3 spec. Seine. Sept. 8.
 4966 No. 191. Flatts. 5 spec. Seine. Sept. 7.
 4968 No. 518. Nonsuch Bay. Seine. 3 spec. Oct. 4.
 4969 No. 531. Flatts. Hook. 4 spec. Oct. 2.
 4970 No. 555. Flatts. 3 spec. Oct. 5.
 4971 No. 590. Port Royal Bay. Seine. Sept. 21.

91. *Decapterus scombrinus* (Val.). ROBIN.

4967 No. 302. Flatts. 2 spec. Hook. Sept. 8.

These two examples are referred to *D. scombrinus*, although it is doubtful if this species be distinct from *punctatus*.

92. *Trachurops crumenophthalmus* (Bloch). GOGGLER.

5465 No. 114. Well Bay, Cooper's Id. 7 spec. Seine. Sept. 6.
 5466 No. 320. Shelly Bay. Seine. 2 spec. Sept. 9.
 5467 No. 708. Packward's Bay. Seine. Sept. 23..

93. *Seriola falcata* C. & V. BONITO.

5333 No. 30. Near Hungry Bay. Hook. Aug. 29.
 5334 No. 34. Near Hungry Bay. Hook. Aug. 29.
 5335 No. 395. White's Flat Channel. Hook. Oct. 6.
 D. VII-1, 27; A. II-1, 18.
 5336 No. 780. Castle Harbor. Under *Sargassum*. Young.
 Oct. 18.

94. *Seriola lalandi* C. & V. AMBER FISH.

5337 No. 869. St. George's. Mr. F. B. Spurling. Oct. 25.

95. *Seriola zonata* (Mitch.). CREVALLE.

BARBOUR, Bull. M. C. Z., XLVI, No. 7, 1905, 118.

96. *Naucrates ductor* L. PILOT FISH.

GOODE, Am. Jour. Sci. Arts, XIV, Oct., 1877, 292.

97. **Trachinotus glaucus** (Bloch). ALEWIFE.

5468 No. 317. Shelly Bay. 3 spec. Seine. Sept. 9.

5469 No. 876. Hamilton. 2 spec. Fred Ingham. Nov. 6.

98. **Trachinotus goodei** Jordan & Evermann.5470 No. 156. Well Bay, Cooper's Id. Young. D. 20; A. 18.
Sept. 5.CXXVII. Family **Rachycentridæ**.99. **Rachycentron canadus** (L.). CUBBY YEW.GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 292, as *Elacate canadæ*.CXXVIII. Family **Stromateidæ**.100. **Gobiomorus gronovii** (Gmelin).5245 No. 391. Castle Roads. Under *Physalia*. L. Mowbray.
March, 1904.101. **Psenes pellucidus** Lütken.5285 No. 930. Castle Harbor. Under *Sargassum*. L. Mowbray.
Aug. 17, 1903.CXXIX. Family **Coryphaenidæ**.102. **Coryphaena hippurus** L. DOLPHIN.4969 No. 401. Flatts. Young. Under *Sargassum*. Oct. 10.

An individual one and three-sixteenths inches long to caudal base was collected at the Flatts, Bermuda, Oct. 10, 1905, under floating *Sargassum*. Sides with 14 narrow dark crossbars; caudal fin dark in its middle portion, pale at base and tip; dorsal and anal blackish, mingled with pale; pectorals pale; ventrals dusky, intermingled with pale; iris silvery. The ventral reaches to the anal origin; the pectoral not nearly to vent, shorter than head.

4961 No. 438. South of Gurnet Rock. Oct. 13.

A large dolphin was caught by hook south of Gurnet Rock, Oct. 13, 1905. Length to base of middle caudal rays, $33\frac{1}{4}$ inches; depth

of body, at base of pectoral, $6\frac{3}{8}$ inches; least depth of caudal peduncle, $1\frac{1}{2}$ inches; eye 2 in snout, 6 in head; maxilla scarcely to below middle of pupil; forehead decidedly convex but not very high, its greatest depth over the eye only $\frac{1}{2}$ head. Ventral $5\frac{1}{4}$ inches, not reaching near to vent; pectoral $4\frac{3}{8}$ inches, about equal to head without snout. Many small black blotches like ink-spots on head and body, largest and most numerous in pectoral region. Upper parts slaty blue, lower parts silvery. Anal rays 26.

CXXXII. Family **Bramidae**.

103. **Brama raii** (Bloch).

GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 292

CXXXIV. Family **Centrolophidae**.

104. **Centrolophus** sp.

GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 292.

CXLIV. Family **Cheilodipteridae**.

105. **Apogon pigmentarius** (Poey).

4854 No. 523. Cooper's Id., west side. Oct. 24.

4855 No. 685. Long Bay, Cooper's Id. Seine. Sept. 25.

Two individuals of this beautiful species were seined at Cooper's Id., one of them in Long Bay, Sept. 25, and the other on the west side, Oct. 24. The life colors of the Long Bay specimen are almost retained in the spirits; but the other example has lost all its bright colors and shows a very pale body profusely sprinkled with little dark specks and black tips on the ventrals.

The Long Bay specimen, collector's number 685, Museum number 4855, is purplish brown with much silvery on head and lower half of body as far back as the middle of the anal fin. The membranes of all the fins except the pectoral are dark; the pectorals are pale; many very small points of pale blue (now almost white) on the body.

D. VI, 1, 10; A. II, 9; scales $2\frac{1}{2}$ —24—8.

The soft dorsal is much higher than the spinous; the ventral is long, and reaches to the 5th ray of the anal. The length of the fish without caudal is $1\frac{1}{2}$ inches.

The individual from the west side of Cooper's Id., collector's number 523, Museum number 4854 is, about as large as the one above described. Its color is all lost except the very black tips of the ventrals and the sprinkling of minute dark specks on head, body, and fins. The longest dorsal ray is more than $\frac{1}{4}$ of total to caudal base. The eye is large, nearly $\frac{2}{3}$ as long as the head. D. vi, 1, 10; A. ii, 8; scales $2\frac{1}{2}$ —26—8. The maxilla reaches to below the hind margin of the eye; the pectoral to above the first anal ray; the ventral to the base of the fourth anal ray.

106. *Apogon sellicauda* Evermann & Marsh.

To this species are referred the following three individuals of *Apogon*, collected in Hungry Bay and at Cooper's Island: No. 524, Museum Catalogue number 4856, west side of Cooper's Id., Oct. 24, 1905. Length to end of scales, $1\frac{5}{8}$ inches. D. vi, 1, 9; A. ii, 8; scales $2\frac{1}{2}$ —27—10.

No. 61, Museum Catalogue number 4857, two specimens, Hungry Bay, Aug. 28, 1905. D. vi, 1, 9; A. ii, 8; scales $2\frac{1}{2}$ —26—8. Length to end of scales, $1\frac{1}{4}$ inches. D. vi, 1, 9; A. ii, 8; scales $2\frac{1}{2}$ —25—10. Length to end of scales, 1 inch.

Number 524 agrees fully and clearly with the published description of *A. sellicauda*. Its beautiful life color has faded entirely except the dark blotches on opercle, back near base of soft dorsal, and caudal peduncle. The smaller examples still retain traces of the original scarlet and the dark markings are much more intense than in number 524. The black band behind the eye is continued faintly in front of the eye around the snout.

107. *Apogon binotatus* (Poey).

BARBOUR, Bull. M. C. Z., XLVI, No. 7, 1905, 119.

108. *Apogon imberbis* (L.).

GOODE, Am. Jour. Sci. Arts, XIV, Oct., 1877, 292.

109. *Apogon maculatus* (Poey).

BARBOUR, Bull. M. C. Z., XLVI, No. 7, 1905, 119.

JORDAN & EVERMANN, Bull. 47, U. S. N. M. 1109.

Bermuda specimen in New York Aquarium, in alcohol.

Length to base of middle caudal rays	3 $\frac{1}{4}$
Depth of body	1 $\frac{1}{8}$
Least depth of caudal peduncle	$\frac{1}{2}$
Head	1 $\frac{1}{4}$
Eye	$\frac{7}{16}$
Snout	$\frac{1}{4}$
Maxilla nearly to hind margin of eye.	
Preopercle distinctly serrulate.	

Color in spirits: pale yellowish brown. A dark blotch under base of second dorsal, as long as the eye, on left side, but only $\frac{2}{3}$ as long on the right. Faint trace of a smaller dark blotch on top of caudal peduncle near root of caudal fin. Iris now dark bluish. The body was bright rosy in life.

CXLVI. Family **Serranidæ**.

110. **Promicrops guttata** (L.). JEW FISH.

TOWNSEND, New York Aquarium Report, 1905, 36.

111. **Bodianus fulvus** (L.). YELLOW CONEY.

BARBOUR, Bull. M. C. Z., XLVI, No. 7, 1905, 120.

112. *Bodianus fulvus punctatus* (Linnæus). BLACK CONEY.

4898 No. 26. Ten miles off Ireland Id. Fish-pot. Aug. 25.

4899 No. 867. South Shore, near Cooper's Id. Oct. 25.

113. *Bodianus fulvus ruber* (Bl. & Schn.). RED CONEY.

4900 No. 5. Hungry Bay. 2 spec. Aug. 24.

4901 No. 355. 1 $\frac{1}{2}$ m. South of Gurnet Rock. Hook. Oct. 5.

114. **Epinephelus maculosus** (C. & V.). RED HIND.

4982 No. 47. Ten miles off Ireland Id. Fish-pot. Aug. 31.

D. x, 1, 16; A. III, 8; scales 16-107-28; gill rakers 16 or 17 below angle, the longest less than $\frac{1}{2}$ eye, and only 6 or 7 of them differentiated, the rest connected except at the tips.

A few weak scales on maxilla. Length to base of caudal fin, 9 $\frac{1}{2}$ inches.

4905 No. 550. Nonsuch Bay. Seine. Sept. 29.

A small example, 5 $\frac{1}{4}$ inches long to base of caudal fin, shows practically the same colors in spirits as the larger individual. Head

and body profusely covered with roundish brown spots, about half as large as the pupil, soft dorsal, caudal and anal with a dark margin edged with white, tips of the membranes connecting dorsal spines white, spots on belly and above anal base whitish. Pectoral pale but with traces of six or seven very narrow bands formed by spots on the rays, but not on the connecting membrane.

115. *Epinephelus morio* (C. & V.). RED GROPER.

4983 No. 197. Flatts. Fish-pot. Sept. 8.
4984 No. 331. Flatts, mouth of harbor. Fish-pot. Oct. 6.

116. *Epinephelus striatus* (Bloch). HAMLET.

4985 No. 7. Hungry Bay. Aug. 24.
4986 No. 25. Saw Kettle, Hamilton Harbor. Aug. 25.
4987 No. 46. Ten miles off Ireland Id. Fish-pot. Aug. 31.
4988 No. 184. The Flatts. Fish-pot. Young. Sept. 8.
4989 No. 185. The Flatts. Seine. Sept. 7.
4990 No. 198. The Flatts. Fish-pot. Sept. 8.
4991 No. 409. Harrington Sd. Fish-pot. Sept. 20.
4992 No. 474. Jones Bay. Young. Seine. Sept. 25.
4993 No. 578. Flatts. Fish-pot. Young. Sept. 29.
4994 No. 651. Old Ferry, St. George's. Seine. 2 young. Sept. 23.
4995 No. 756. The Reach, St. George's. Seine. 3 young. Oct. 23.

117. *Epinephelus drummond-hayi* Goode & Bean.

GOODE & BEAN, Proc. U. S. N. M., 1878, 173, 174. Bermuda.
JORDAN & EVERMANN, Bull. 47, U. S. N. M., 1896, 1159.

118. *Mycteroperca bonaci* (Poey). ROCK FISH.

5216 No. 22. Saw Kettle, Hamilton. Young. Aug. 25.
5217 No. 49. Ten miles off Ireland Id. Young. Fish-pot. Aug. 31.
5218 No. 98. The Flatts. Young. "Salmon" Rock. Seine. Sept. 8.
5219 No. 187. The Flatts. Young. Seine. Sept. 7.
5220 No. 377. Long Bay, Somerset. Young. Seine. Sept. 22.
5221 No. 529. Flatts. Young. Oct. 6.
5222 No. 572. Hunt's Bay, Port Royal. Young. Seine. Sept. 21.

5223 No. 579. Flatts. Fish-pot. Young. Sept. 20.
 5224 No. 916. Hungry Bay. Seine. 2 young. Nov. 7.

119. *Mycteroperca microlepis* (Goode & Bean). ROCK FISH.

5225 No. 48. Ten miles off Ireland Id. Young. Fish-pot.
 Aug. 31.

120. *Mycteroperca tigris* (?) (C. & V.). GAG.

5226 No. 24. Ten miles off Ireland Id. Young. Fish-pot.
 Aug. 25.

121. *Mycteroperca venenosa apua* (Bloch). RED ROCKFISH.

5227 No. 883. Challenger Bank. 28 fms. Hook. Oct. 12.
 5228 No. 884. Challenger Bank. 30 fms. Hook. Oct. 12.

122. *Mycteroperca bowersi* (?) Evermann & Marsh. PRINCESS ROCK-FISH.

TOWNSEND, New York Aquarium Report, 1905, 36.

123. *Mycteroperca falcata* (Poey).

BOULANGER, Cat. 1, 261, as *Epinephelus falcatus*. Adult specimen from Bermuda. Jones.

124. *Hypoplectrus puella* (C. & V.). BUTTER HAMLET.

5082 No. 66. Hamilton Harbor. W. Allen. Aug. 28.
 5083 No. 181. The Flatts. Fish-pot. Sept. 8.
 5084 No. 183. The Flatts. Eel-pot. Sept. 9.
 5085 No. 488. The Flatts. Eel-pot. Oct. 22.
 5086 No. 528. The Flatts. Eel-pot. Oct. 6.
 5087 No. 597. Port Royal Bay. Seine. 2 young. Sept. 21.
 5088 No. 647. Old Ferry, St. George's. 3 young. Sept. 23.
 5089 No. 709. Packward's Bay. Seine. Young. Sept. 23.
 5090 No. 934. Flatts. Eel-pot. Nov. 10.

125. *Prionodes phœbe* (Poey). TATLER.

5283 No. 437. Two and a half miles south Gurnet Rock. 60 fms. Hook. 2 spec. Oct. 5.
 5284 No. 885. South Shore. 2 spec. Oct. 12.

126. *Petrometopon cruentatus* (Lacépède). GRAYSBY.

5270 No. 380. Four miles North by East of Dockyard Point, White's Flat Channel. Hook. Sept.
 5271 No. 393. White's Flat Channel. Hook. 5 spec. Oct. 6.

127. **Dermatolepis inermis** (C. & V.). MUTTON HAMLET.

4972 No. 85. St. David's Id. Fish-pot. Sept. 5.
 4973 No. 549. Nonsuch Bay. Seine. Sept. 29.
 4974 No. 676. Nonsuch Bay. Seine. 2 spec. Sept. 26.

These individuals range in length to base of caudal from $4\frac{3}{8}$ inches to $5\frac{1}{8}$ inches.

128. **Alphestes chloropterus** (C. & V.). RED NIGGER FISH.

4838 No. 874. South shore. Oct. 12.

129. **Rhypticus bistrispinus** (Mitchill). SOAP FISH.

5295 No. 76. Nonsuch Id. Aug.

130. **Paranthias furcifer** (C. & V.). BARBER.

5265 No. 2. Hungry Bay. Aug. 24.
 5266 No. 35. Near Hungry Bay. Hook. Aug. 29.
 5267 No. 925. South Shore. Mr. F. B. Spurling. Nov. 10.

CXLVII. Family **Lobotidae**.131. **Lobotes surinamensis** (Bloch).

5164 No. 402. Flatts. Young. Under *Sargassum*. Oct. 10.

CXLVIII. Family **Priacanthidae**.132. **Priacanthus arenatus** (C. & V.). GLASS EYE. BLEAR EYE.

5281 No. 398. North Shore off Flatts. 2 spec. Oct. 6.
 5282 No. 882. North Shore off Flatts. 2 spec. Oct. 12.

133. **Priacanthus cruentatus** (Lacépède).

A specimen $6\frac{1}{4}$ inches long, including caudal, is in the Hist. Soc. Collection at Parlaville, Hamilton.

CXLIX. Family **Lutianidae**.134. **Lutianus apodus** (Bl. & Schn.). SCHOOLMASTER.

5230 No. 15. Hungry Bay. Young. Aug. 24.
 5231 No. 915. Hungry Bay. Young. Seine. Nov. 7.

135. *Lutianus griseus* (L.). GRAY SNAPPER.

5232 No. 56. Hungry Bay. Young. Seine. Aug. 30.
 5233 No. 68. The Flatts (bridge). Hook. Sept. 7.
 5234 No. 171. Hayward's Bay. Seine. Sept. 6.
 5235 No. 330. Ely's Harbor. Seine. Sept. 20.
 5236 No. 505. Wescott Bay. 2 young. Seine. Sept. 25.
 5237 No. 587. Port Royal Bay. Seine. Young. Sept. 21.
 5238 No. 802. The Reach, St. George's. Seine. Oct. 23.
 5239 No. 853. Great Bay, St. David's Id. 5 young. Sept. 18.

136. *Lutianus synagris* (Linnaeus). SILK SNAPPER.

5241 No. 307. The Flatts, fish pot. Sept. 8.
 5242 No. 397. North shore off Flatts. 2 spec. "White Bottom
 Snapper." Oct. 2.
 5243 No. 807. Flatts. Nov. 3.

137. *Lutianus vivanus* (C. & V.).

5244 No. 8. Hungry Bay. Aug. 24.
 5229 No. 326. Two-and-a-half miles south of Gurnet Rock.
 Oct. 5.
 5240 No. 436. Two-and-a-half miles south of Gurnet Rock.
 Oct. 5.

No. 5244 is $8\frac{1}{2}$ inches long to base of middle caudal rays. D. x, 14; A. III, 8; scales 8-72-17. Two gill rakers and four rudiments above angle of first arch; ten developed rakers and five rudiments below angle; the longest raker $\frac{1}{2}$ as long as the eye. Iris lemon-yellow; a very narrow black margin on caudal fin. Longest dorsal spine (4th) is $1\frac{1}{4}$ inches long, or slightly longer than upper jaw, and about equal to longest ray of anal. Ventral reaches slightly past vent; pectoral to vertical through anal origin, seven rows of scales on cheek, about ten rows on opercle.

No. 5229 is 14 inches long to base of middle caudal rays. D. x, 14; A. III, 8; scales 8-72-17. Two developed gill rakers and five rudiments above angle of first arch, ten developed and five rudimentary rakers below angle, the longest raker about $\frac{1}{2}$ as long as eye. Longest dorsal spine, 2 inches, equals $\frac{3}{5}$ head, also equals distance from eye to tip of snout. Longest anal ray nearly $\frac{1}{2}$ head. Head $5\frac{1}{4}$ inches, $\frac{3}{8}$ of total without caudal. Eye $\frac{1}{2}$ snout, $5\frac{1}{2}$ in head. Ventral reaches past vent; pectoral to vertical through anal origin. Seven rows of scales on cheek, eleven on opercle.

Iris lemon-yellow; a narrow black margin on caudal; no dark blotch on base or in axil of pectoral, and none on sides.

In *L. hastingsi* the gill rakers are 7+9; the ventral does not reach to the vent by a space $\frac{1}{2}$ as long as the eye, and the pectoral extends only to the vent.

138. *Lutianus aya* (Bloch). RED SNAPPER.

GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 292, as *Lutjanus aya*. There is no evidence that *aya* occurs in Bermuda.

139. *Lutianus buccanella* (C. & V.). BLACK-FIN; RED SNAPPER.

GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 292, as *Lutjanus buccanella*.

140. *Ocyurus chrysurus* (Bloch). YELLOW TAIL.

- 5247 No. 3. Hungry Bay. Aug. 24.
- 5248 No. 96. The Flatts. 2 young. Seine. Sept. 8.
- 5249 No. 373. Long Bay, Somerset. 5 young. Seine. Sept. 22.
- 5250 No. 486. Flatts. Oct. 27.
- 5251 No. 832. Ely's Harbor. Seine. 3 young. Sept. 20.
- 5252 No. 848. Ely's Harbor. Seine. 3 young. Sept. 20.

CL. Family **Hæmulidæ.**

141. *Hæmulon carbonarium* Poey. BLACK-TAIL GRUNT.

- 5040 No. 32. Near Hungry Bay. Hook. 2 spec. Aug. 28.
- 5041 No. 37. Near Hungry Bay. Hook. Aug. 29.

142. *Hæmulon flavolineatum* (Desmarest). YELLOW GRUNT.

- 5042 No. 40. Near Hungry Bay. 2 spec. Aug. 29.
- 5043 No. 45. Ten miles off Ireland Id. Fish-pot. Aug 31.
- 5044 No. 109. Well Bay, Cooper's Id. 2 spec. Seine. Sept. 3.
- 5045 No. 306. Flatts. Fish-pot. Sept. 8.
- 5046 No. 381. Flatts. Fish-pot. Oct. 3.
- 5047 No. 388. Long Bay, Somerset. 3 young. Seine. Sept. 22.

143. *Hæmulon melanurum* (Linnæus). STREAKED GRUNT.

- 5048 No. 394. White's Flat Channel. Hook. Oct. 6.
- 5049 No. 733. Castle Harbor, Cooper's Id. Young. Oct. 25.
- 5050 No. 774. Cooper's Id., west side. Young. Oct. 25.

144. *Hæmulon sciurus* (Shaw). BOAR GRUNT.

- 5054 No. 95. The Flatts. 4 young. Seine. Sept. 8.

5055 No. 117. Well Bay. Young. Seine. Sept. 6.
 5056 No. 169. Hayward's Bay, St. David's Id. 2 spec. Seine.
 Sept. 6.
 5057 No. 305. Flatts. Seine. Sept. 8.
 5058 No. 387. Long Bay, Somerset. Young. Seine. Sept. 22.
 5059 No. 589. Port Royal Bay. Seine. 2 spec. Sept. 21.
 5060 No. 757. The Reach, St. George's. Seine. 5 young. Oct. 23.
 5061 No. 816. Long Bird Id., south shore. Young. Oct. 24.

145. *Hæmulon album* C. & V. MARGATE FISH.

TOWNSEND, New York Aquarium Report, 1905, 36.

146. *Hæmulon bonariense* C. & V. BLACK GRUNT.

TOWNSEND, New York Aquarium Report, 1905, 36.

147. *Hæmulon macrostomum* Gthr. SOW GRUNT.

BARBOUR, Bull. M. C. Z., XLVI, No. 7, 1905, 122.

148. *Bathystoma aurolineatum* (C. & V.). WHITE GRUNT.

4886 No. 110. Well Bay, Cooper's Id. Seine. Sept. 3.
 4887 No. 137. Hayward's Bay, St. David's Id. 2 spec. Sept. 4.
 4888 No. 150. Well Bay. Seine. Sept. 5.
 4889 No. 170. Hayward's Bay. 2 spec. Seine. Sept. 6.
 4890 No. 321. Shelly Bay. Seine. Sept. 9.
 4891 No. 454. Cove near Hunt's Bay, Port Royal Id. Seine.
 Sept. 21.
 4892 No. 557. Ruth's Bay, St. David's Id. Oct. 4.
 4893 No. 570. Hunt's Bay, Port Royal. Seine. Sept. 21.

149. *Bathystoma rimator* (Jord. & Swain). WHITE GRUNT.

BARBOUR, Bull. M. C. Z., XLVI, No. 7, 1905, 123.

150. *Bathystoma striatum* (L.).

BARBOUR, Bull. M. C. Z., XLVI, No. 7, 1905, 123, 20 specimens,
 M. C. Z., No. 10602. Taken by Bickmore, 1862.

151. *Orthopristis chrysopterus* (Linnæus). SAILOR'S CHOICE.

5260 No. 177. Hayward's Bay. 2 spec. Seine. Sept. 6.
 5261 No. 410. Harrington Sd. 2 spec. Fish-pot. Sept. 20.
 5262 No. 514. Flatts, Seine. Sept. 27.
 5263 No. 580. Flatts, Seine. 2 spec. Sept. 20.
 5264 No. 586. Port Royal Bay. Seine. 3 spec. Sept. 21.

CLI. Family **Sparidae**.152. **Calamus bajonado** (Bl. & Schn). PORGY.

4907 No. 369. Long Bay, Somerset. 5 young. Seine. Sept. 22.
 4909 No. 423. Near Red Bay, St. David's Id. Young. Seine. Sept. 28.
 4908 No. 653. Old Ferry, St. George's. Seine. Sept. 23.
 622 No. 900. Two and a half miles south of Gurnet Rock. Jaws of large one. Oct. 5.
 4911 No. 6. Hungry Bay. Aug. 24.
 4912 No. 534. Nonsuch Bay. Young. Seine. Sept. 26.
 4913 No. 808. Flatts. Young. Nov. 3.
 4914 No. 847. Ely's Harbor. Seine. 2 young. Sept. 20.

153. **Calamus calamus** (C. & V.). SHEEPHEAD PORGY.

4910 No. 332. White Shoal Flat. Hook. 13½ in. long. Oct. 6.

154. **Diplodus argenteus** (C. & V.). BREAM.

4976 No. 83. Well Bay, Cooper's Id. Seine. Sept. 6.
 4977 No. 111. Well Bay. 8 young. Seine. Sept. 8.
 4978 No. 133. Gibbet Id. Seine. Sept. 8.
 4979 No. 312. Shelly Bay. Seine. Sept. 9.
 4980 No. 372. Long Bay, Somerset. Young. Seine. Sept. 22.
 4981 No. 571. Hunt's Bay, Port Royal. Young. Seine. Sept. 21.

155. **Lagodon rhomboides** (L.). SPANISH PORGY.

GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 292.

CLIII. Family **Gerridae**.156. **Eucinostomus harengulus** Goode & Bean. SHAD.

4997 No. 57. Hungry Bay. Young. Dip-net. Aug. 29-30.
 4998 No. 74. St. David's Id. Seine. Sept. 6.
 4999 No. 107. Well Bay, Cooper's Id. Seine. Sept. 3.
 5000 No. 165. Nonsuch Bay. Seine. Sept. 4.
 5001 No. 176. Hayward's Bay, St. David's Id. 2 spec. Seine. Sept. 6.
 5002 No. 192. Flatts. 2 spec. Seine. Sept. 7.
 5003 No. 304. Flatts. Seine. Sept. 8.
 5004 No. 314. Shelly Bay. Seine. Sept. 9.

5005 No. 379. Long Bay, Somerset. Seine. Sept. 22.
 5006 No. 671. Soldier Bay, Old Ferry. Seine. Young. Sept. 23.
 5007 No. 845. Ely's Harbor. Seine. Sept. 20.
 5008 No. 858. Shelly Bay. Seine. Sept. 19.

157. *Eucinostomus pseudogula* Poey. SHAD.

5009 No. 796. Long Bird Id. Seine. Oct. 24.
 5010 No. 861. Hayward's Bay, St. David's. Seine. Sept. 19.

158. *Eucinostomus gula* (C. & V.). SHAD.

GOODE, Am. Jour. Sci. Arts, XIV, Oct., 1877, 291.
 BARBOUR, Bull. M. C. Z., XLVI, No. 7, 1905, 124.

159. *Ulæma lefroyi* (Goode). LONG BONE SHAD.

GOODE, Am. Jour. Sci. Arts, XIV, Oct., 1877, 291, as *Eucinostomus lefroyi*.

160. *Xystæma cinereum* (Walbaum). SHAD.

5492 No. 134. Gibbet Id. Seine. Sept. 8.

CLIV. Family **Kyphosidae.**

161. *Kyphosus sectatrix* (Linnæus). CHUB.

5132 No. 50. Hungry Bay. Aug. 30.
 5133 No. 73. St. David's Id. Seine. Sept. 6.
 5134 No. 149. Well Bay, Cooper's Id. Seine. Sept. 5.
 5135 No. 643. Old Ferry, St. George's. Sept. 23.
 5136 No. 790. Cooper's Id. 3 spec. Oct. 25.
 5137 No. 803. The Reach, St. George's. Seine. Oct. 23.

CLV. Family **Sciaenidae.**

162. *Eques acuminatus* (Bl. & Schn.). CROAKER.

4996 No. 926. St. George's Harbor. L. Mowbray. Sept. 4, 1903.

CLIX. Family **Pomacentridæ.**

163. *Abudefduf saxatilis* (Linnæus). COW PILOT.

4823 No. 12. Hungry Bay. Aug. 24.

4824 No. 51. Hungry Bay. Young. Aug. 30.
 4825 No. 72. St. David's Id. Fish-pot. Sept. 6.
 4826 No. 108. Well Bay, Cooper's Id. Seine. Sept. 3.
 4827 No. 345. Great Shoal, Castle Harbor. 2 spec. Pot.
 Sept. 25.
 4828 No. 368. Long Bay, Somerset. 3 spec. Seine. Sept. 22.
 4829 No. 654. Old Ferry, St. George's. Seine. Sept. 23.

164. *Eupomacentrus adustus* (Troschel). YELLOW BELLY.

5013 No. 521. Nonsuch Bay. Eel-pot. Oct. 4.
 5014 No. 544. Nonsuch Id. Eel-pot. Oct. 4.
 5015 No. 701. Nonsuch Id. Eel-pot. 2 spec. Sept. 25.



FIGURE 4. *EUPOMACENTRUS CHRYSUS* Bean.

165. *Eupomacentrus chrysus* Bean.

BEAN, Proc. Biol. Soc. Wash., xix, Feb. 26, 1906, 32.
 5025 No. 525. White's Flat Channel. Eel-pot. Oct. 6.

Although it seems risky to describe a new *Eupomacentrus* in the existing uncertainty about the nominal species, the subject of the present article is so different from all the known forms as to leave no choice for the writer. An individual measuring $1\frac{5}{8}$ inches to end of scales, and greatest depth $1\frac{3}{16}$ inch, is almost uniform yellow, the only dark portions being the eye, a diffuse spot on the base of the spinous

and soft dorsal, a dark saddle on the top of the caudal peduncle, a very small dark point at the upper axil of the pectoral, a faint dusky area on the snout and nape, and about 21 very faint, narrow, dusky lines on the sides following the hind margins of the rows of scales, some of these extending above the lateral line, but none of them reaching far below the lower edge of the pectoral.

D. XII, 16; A. II, 15; scales 328-11, the pores occupying 18 scales. The depth is $\frac{1}{2}$ total length to end of scales. Eye longer than snout, $\frac{2}{3}$ head. Head $3\frac{1}{4}$ in total to end of scales. Mouth small, the upper jaw barely reaching to vertical at front of orbit. Interorbital space $\frac{1}{3}$ head. First dorsal spine as long as snout; dorsal spines regularly graduated, the last one about $\frac{2}{3}$ head; the 7th soft ray equal to head without snout. The pectoral reaches to the 12th row of scales; the ventral filamentous at tip and reaching to anal origin.

An irregular dark blotch at the bases of the last three dorsal spines and the first three soft rays extending down to the lateral line covering five rows of scales; this blotch is considerably larger than the eye. A small rectangular dark blotch forming a saddle on the top of the caudal peduncle, covering three rows of scales. A minute black blotch in the upper axil of the pectoral. Iris dark. Nape and top of snout dusky. Fins all pale; general color yellow, this also extending upon the scales covering the lower portions of the dorsal and anal fins.

166. *Eupomacentrus fuscus* (C. & V.).

5011 No. 495. Nonsuch Id. Eel-pot. 4 spec. Sept. 18.
 5012 No. 509. Wescott Bay. Seine. Sept. 25.
 5021 No. 702. Nonsuch Id. 4 spec. Sept. 25.

167. *Eupomacentrus leucostictus* (Müll. & Trosch.). YELLOW BELLY.

5016 No. 59. Hungry Bay. 7 spec. Dip-net. Aug. 29-30.
 5017 No. 120. Nonsuch Id. Seine. Sept. 3.
 5018 No. 477. Jones Bay. Young. Seine. Sept. 25.
 5019 No. 496. Nonsuch Id. Eel-pot. 2 spec. Sept. 18.
 5020 No. 688. Long Bay, Cooper's Id. Seine. 3 spec. Sept. 25.
 5022 No. 729. Castle Harbor, Cooper's Id. Oct. 25.
 5023 No. 742. Jones Bay, Cooper's Id. Under rocks. Oct. 28.
 5024 No. 881. Hungry Bay. Dip-net. Nov. 6.

168. *Microspathodon chrysurus* (C. & V.).

BARBOUR, Bull. M. C. Z., XLVI, No. 7, 1905, 125. Two very small ones from *Sargassum* off Ireland Id.

According to Günther, Cat. IV, 57, this species has: D. XII, 15-16; A. II, 13-14; scales 3-28 to 29-10. Depth of body one-half length to caudal base. Preorbital wider than long. Caudal forked. Color: brown, dorsal, anal and ventral black; caudal yellow; blue dots round the eyes and on the back.

Under the name *Glyphidodon chrysurus* Günther records five skins of adults in the British Museum from Caribbean Sea. (Dr. Parnell's collection.)

169. Microspathodon niveatus (Poey).

5181 No. 522. Castle Harbor, Tucker's Town Point. Oct. 20.

D. XII, 15; A. II, 14; scales 3-27-11. About 6 rows of scales on cheek from front to rear, 3 vertical rows. Chin, preorbital, and tip of snout naked.

Ground color very dark blue, with pale blue dots which show emerald green reflections in life. Four blue spots on top of snout. Four on interorbital area. Six on nape in front of 1st dorsal. Thirteen on dorsals, including base. One on caudal peduncle. Two faint ones at root of caudal. One on anal base. About 14 on the back and sides. Two on opercle. One at angle of preopercle. One at angle of mouth. Six around the eye. Pectoral and caudal and tip of soft dorsal rays pale in life. Dorsals, anal, and ventrals very dark.

170. Furcaria cyanea Poey.

BARBOUR, Bull. M. C. Z., XLVI, No. 7, 1905, 124. One specimen, M. C. Z. No. 14801, taken by Captain Hamilton, 1864.

CLX. Family **Labridæ**.

171. Lachnolaimus maximus (Walbaum). HOG FISH.

5151 No. 864. St. George's. Mr. F. B. Spurling. Oct. 30.

172. Harpe rufa (Linnæus). SPANISH HOG FISH.

5063 No. 21. Ten miles off Ireland Id. Fish-pot. Aug. 25.

173. Iridio bivittatus (Bloch). SLIPPERY DICK.

5104 No. 16. Hungry Bay. Young. Aug. 24.

5105 No. 54. Hungry Bay. Young. Many. Aug. 30.

5106 No. 93. The Flatts. 2 spec. Fish-pot. Sept. 8.

5107 No. 122. Nonsuch Id. and Well Bay. Young. Sept. 3.

5108 No. 126. Well Bay, Cooper's Id. Eel-pot. Sept. 6.

5109 No. 154. Well Bay. Seine. Sept. 5.
 5110 No. 168. Nonsuch Id. Landing. Sept. 6.
 5111 No. 390. Long Bay, Somerset. Young. Seine. Sept. 22.
 5112 No. 405. Well Bay, Cooper's Id. Eel-pot. Oct. 5.
 5113 No. 418. Well Bay. Young. Seine. Sept. 26.
 5114 No. 428. Near Red Bay. Young. Seine. Sept. 28.
 5115 No. 469. Jones Bay, Cooper's Id. Seine. Sept. 25.
 5116 No. 487. Flatts. Oct. 27.
 5117 No. 511. Wescott Bay. Seine. Sept. 25.
 5118 No. 644. Old Ferry, St. George's. Sept. 23.
 5119 No. 658. Well Bay, Cooper's Id. Seine. Sept. 26.
 5120 No. 686. Long Bay, Cooper's Id. Seine. Sept. 25.
 5121 No. 706. Packward's Bay. Seine. Sept. 23.
 5122 No. 770. Cooper's Id., west side. Green. Oct. 25.
 5123 No. 800. Smith's Id., St. George's. 2 spec. Seine.
 Oct. 17.



FIGURE 5. *IRIDIO DECORATUS* Bean.

174. *Iridio decoratus* Bean.

BEAN, Proc. Biol. Soc. Wash., xix, Feb. 26, 1906, 29.

5128 No. 545. Nonsuch Id. 2 spec. Oct. 4.

D. ix, 11; A. iii, 12; scales 2-27-7. Eye equal to snout, 4 in head; head $3\frac{1}{2}$ in total to end of scales; depth $4\frac{1}{3}$. The pectoral reaches to eighth row of scales; ventral about one-half head, not reaching nearly to vent.

Color in spirits: Brownish above middle line, paler below; a short dark stripe on snout in front of eye; a narrow dark line from eye backward to nape; a second irregular line also from eye below this, and a third broken line beginning behind eye and running toward origin of lateral line; a small black dot in upper axil of pectoral.

FIGURE 6. *IRIDIO ELEGANS* Bean.175. *Iridio elegans* Bean.

BEAN, Proc. Biol. Soc. Wash., xix, Feb. 26, 1906, 30.

5129 No. 703. Nonsuch Id. Eel-pot. Sept. 25.

5130 No. 762. Jones Bay, Cooper's Id. Oct. 25.

5131 No. 767. Jones Bay, Cooper's Id. 2 spec. Oct. 28.

D. ix, 11; A. iii, 12; scales, 2½-26-9. Eye 1½ in snout, 4 in head. Head 3¼ in total to end of scales. Depth equal to head. Pectoral extends to tenth scale of transverse series; ventral ½ head, not quite reaching vent.

Colors in spirits: A narrow blue line from angle of mouth to edge of subopercle; a wavy blue line starts near angle of mouth, runs under eye and gently down toward upper axil of pectoral; spots and broken lines of blue behind eye and on nape; five pale bars from edge of back downward toward median line; a large, diffuse black blotch on anterior half of soft dorsal extending downward to lateral line; two smaller dark blotches under last four dorsal rays; an irregular dark blotch on root of caudal; three blue lines on body, the uppermost along lateral line, the others below median line; three short, oblique blue lines in pectoral region.

176. *Iridio meyeri* Bean.

BEAN, Proc. Biol. Soc. Wash., xix, Feb. 26, 1906, 29.

4938 No. 1101. Nonsuch Id. Oct. 1905.

This species is remarkable for its small mouth, full lips, coloration, and unusual dentition. It does not agree well with the Atlantic species of *Iridio* because it has, apparently, only two incisors in the front of each jaw, and these project almost straight forward. The upper jaw is as long as the eye, two-thirds as long as the snout,

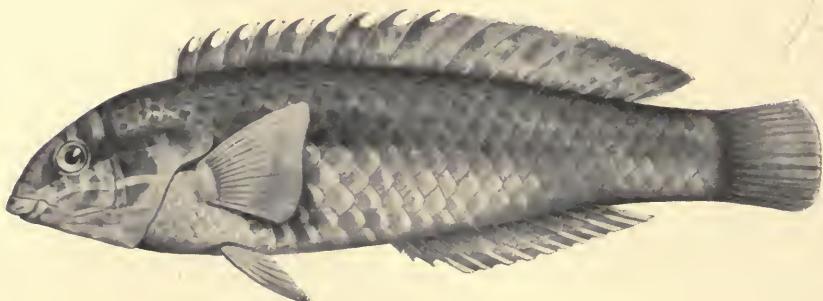


FIGURE 7. IRIDIO MEYERI Bean.

and scarcely one-fifth as long as the head. The upper lip is so full as to conceal the teeth, its width equalling more than one-half the diameter of the eye. The lower lip also is much fuller than in the Bermudian Iridios generally, its width being more than one-half its length. Head $\frac{2}{5}$ of total to base of caudal rays; depth about $\frac{1}{4}$; eye $\frac{1}{5}$ length of head, snout $\frac{2}{7}$. Least width of caudal peduncle $\frac{1}{3}$ of its least height. Anterior profile of head strongly convex, the mouth on a level with the lower axil of pectoral. Opercular flap broad, its width equal to its length, which is $\frac{1}{6}$ of head. About four rows of scales in front of the dorsal fin, the scales not meeting on the median line, the nape covered only with very rudimentary scales. The lateral line begins in the fifth row of scales, curves up to about the third until it reaches to below the eighth ray of the soft dorsal, where it curves sharply down to the median line, its straight portion piercing six scales. The tubes are almost all simple, but two on one side and three on the other have a short branch. D. IX, 11; A. III, 11; scales 3-27-9.

The spinous dorsal begins slightly in advance of the pectoral. The first spine is $\frac{1}{4}$ as long as the head, the fourth, and longest, nearly $\frac{1}{3}$ as long as the head. The longest dorsal ray is $\frac{2}{5}$ as long as the head and about $\frac{1}{5}$ of total length to caudal base. The last ray is nearly as long as this. The anal base is as long as the head, and three times the length of its longest ray. The anal spines are graduated, the third being nearly as long as the first soft ray. The pectoral reaches to the eighth scale of the lateral line, and not quite to a vertical at the vent. The ventral is as long as the postorbital part of the head: it extends about as far back as the pectoral. The caudal is a little convex when fully expanded, but the lower rays are slightly larger than the upper.

In spirits the body is dusky in its upper half, pale below. A

diffused brown band from snout continued behind eye to base of caudal, its greatest width equal to length of snout. An obscure narrow band below this broken up into spots on alternate scales. A dark blotch on the membrane between the 5th and 6th dorsal spines and another between the 6th and 7th, neither of them as long as the eye. A minute dark spot at the base of the last dorsal ray. A small dark blotch on the upper axil of the pectoral. A narrow dusky bar across the interorbital space and two similar bands on the nape, the middle one extending from the upper posterior margin of one orbit to the other and the third one blending into the band from eye to caudal fin. A narrow white streak, narrower than the pupil, from angle of mouth to upper axil of pectoral, then running into one of the oblique streaks on the body. A second whitish streak from mandibular articulation across preopercle and subopercle. About eleven narrow, interrupted, whitish streaks running obliquely across the body, beginning in front of the pectoral origin and extending backward past the anal origin, but not reaching above the level of the upper axil of the pectoral. Membranes of all the fins pale, but the spinous and soft dorsals were probably dusky in life in their lower portions.

Length of the type specimen to caudal base, 4 inches. Named for Capt. W. E. Meyer, of St. George's, Bermuda, in recognition of his well-known services to science in the colony.

177. *Iridio microstomus* Bean.

BEAN, Proc. Biol. Soc. Wash., xix, Feb. 26, 1906, 30.

5138 No 541. Nonsuch Bay. Seine. Sept. 26, 1905.

To the group of species containing *Iridio meyeri* belongs a small individual, which measures $1\frac{1}{2}$ inches to base of caudal.

D. ix, ii; A. iii, ii; scales 3-27-9. Seven or eight rows of scales in front of dorsal origin, the scales on nape smaller than those



FIGURE 8. *IRIDIO MICROSTOMUS* Bean.

on body. Anterior nostril in a short tube. Mouth small and lips broad, overlapping the teeth. Maxilla scarcely reaching front of eye. Two canines in each jaw, those of the mandible projecting nearly straight forward and received between the maxillary pair. Eye $\frac{3}{4}$ length of head. Head $\frac{3}{4}$ of total without caudal. Height a little more than $\frac{1}{4}$ total without caudal. The pectoral reaches to the 8th scale of the lateral line, its length equal to head without snout. The ventral reaches nearly as far back as the pectoral, but not nearly to vent.

A dark band from snout to eye and from eye to caudal base, a small dark spot at base of last dorsal ray and one in upper axil of pectoral; a narrow silvery streak limiting the lateral band above and meeting its fellow of the opposite side in a V shape on the top of the snout. No streaks on the cheeks and no blotches on membrane of spinous dorsal. The ground color of the back is pale lemon-yellow overlaid with minute dusty points. The parts below the lateral band are also pale lemon-yellow but the lower half of the head and the abdominal region show silvery. Fins all colored like the body, except the caudal, which is somewhat tinged with orange and has a band of more intense orange at its base. Iris dusky, overlying pink and silver.

178. *Iridio radiatus* (Linnæus). BLUE FISH.

5124 No. 31. Near Hungry Bay. Hook. Aug. 29.
 5125 No. 38. Near Hungry Bay. Hook. 2 spec. Aug. 29.
 5126 No. 351. Nonsuch Id. Oct. 4.
 5127 No. 866. South shore. Oct. 25.

179. *Iridio cyanocephalus* (Bloch). BLUE HEAD.

BARBOUR, Bull. M. C. Z., XLVI, No. 7, 1905, 125.

180. *Iridio garnoti* (C. & V.).

BARBOUR, Bull. M. C. Z., XLVI, No. 7, 1905, 126.

181. *Chlorichthys bifasciatus* (Bloch). SLIPPERY DICK.

4951 No. 494. Nonsuch Id. Eel-pot. 4 spec. Sept. 18.
 4952 No. 695. Nonsuch Id. Eel-pot. 4 spec. Sept. 25.

182. *Chlorichthys nitidus* (Günther). SCOTCH SLIPPERY DICK.

4953 No. 55. Hungry Bay. 3 young. Aug. 30.
 4954 No. 153. Well Bay, Cooper's Id. Seine. Sept. 5.
 4955 No. 167. Nonsuch Id. Landing. Sept. 6.
 4956 No. 696. Nonsuch Id. Eel-pot.

4957 No. 728. Cooper's Id., Castle Harbor. 3 spec. Oct. 25.
 4958 No. 769. Cooper's Id., west side. 5 spec. Oct. 25.
 4959 No. 778. Near Tucker's Town Point, Castle Harbor. Seine. 2 spec. Oct. 18.

183. **Novaculichthys rosipes** (Jordan & Gilbert).

5246 No. 166. Nonsuch Bay. Seine. Sept. 4.

CLXI. Family **Scaridae.**184. **Pseudoscarus guacamaia** (Cuvier). RAINBOW.

5286 No. 334. Flatts. Fish-pot. Oct. 4.
 5287 No. 337. Flatts. Fish-pot. Oct. 4.
 5288 No. 738. Jones Bay, Cooper's Id. 2 young. Green Parrot. See 419 & 182. Oct. 28.
 620 No. 872. South shore. Capt. W. E. Meyer. Head. Oct. 12.

185. **Scarus cœruleus** (?) (Bloch).

5311 No. 419. Red Bay, St. David's Id. Seine. Sept. 28.

186. **Scarus croicensis** (Bloch). MUD BELLY.

5312 No. 9. Hungry Bay. 2 spec. Aug. 24.
 5313 No. 36. Near Hungry Bay. Aug. 29.
 5314 No. 389. Long Bay, Somerset. 12 young. Seine. Sept. 22.
 5315 No. 421. Red Bay, St. David's Id. 4 spec. Seine. Sept. 28.
 5316 No. 648. Old Ferry, St. George's. Sept. 23.
 5317 No. 668. Wellman Bay, St. George's. 3 young. Sept. 23.
 5318 No. 732. Castle Harbor, Cooper's Id. Young. Oct. 25.
 5319 No. 737. Jones Bay, Cooper's Id. Under rocks. Oct. 28.
 5320 No. 761. The Reach, St. George's. Seine. 3 young. Oct. 23.
 5321 No. 766. Jones Bay, Cooper's Id. 2 young. Under rock. Oct. 28.
 5322 No. 772. Cooper's Id., west side. Oct. 25.
 5323 No. 782. Great Bay, St. David's Id. Seine. 7 spec. Sept. 18.
 5324 No. 785. Green Bay. Seine. 4 spec. Oct. 19.

5325 No. 826. Red Bay, St. David's Id. Young. Oct. 27.
 5326 No. 919. Hungry Bay. Seine. Young. Nov. 7.

187. *Scarus gnathodus* Poey. MUD PARROT.

5327 No. 92. The Flatts. 2 spec. Fish-pot. Sept. 8.

188. *Scarus vetula* (Bl. & Schn.). BLUE FISH.

5328 No. 33. Near Hungry Bay. Aug. 29.

5329 No. 182. The Flatts. Fish-pot. "Parrot". Sept. 8.

189. *Scarus acutus* Poey. MUD BELLY.

GOODE, Am. Jour. Sci. Arts, XIV, Oct., 1877, 291, *Pseudoscarus acutus*.

190. *Scarus taeniopterus* Desm. PARROT FISH.

GOODE, Am. Jour. Sci. Arts, XIV, Oct., 1877, 291, as *Pseudoscarus psittacus*.

191. *Scarus trispinosus* C. & V. RAINBOW.

GOODE, Am. Jour. Sci. Arts, XIV, Oct., 1877, 291, as *Pseudoscarus quadrispinosus*.

192. *Cryptotomus crassiceps* Bean.

BEAN, Proc. Biol. Soc. Wash., XIX, Feb. 26, 1906, 32.

4964 No. 417. Cooper's Id. 2 spec. Sept. 26, 1905.

D. IX, 10 to 11; A. II-III, 9; scales 1½-25-6. No posterior canine tooth. About 12 teeth in front of upper jaw developed as canines, the two outer of which are hooked and recurved; side teeth coalesced into a cutting edge. The lower jaw has about 21 teeth, free at their tips and somewhat canine-like, behind them a narrow cutting edge formed by coalesced teeth. This is the case in the



FIGURE 9. *CRYPTOTOMUS CRASSICEPS* Bean.

smaller specimen, $3\frac{3}{4}$ inches long to end of scales; in the larger type, $4\frac{3}{4}$ inches long to end of scales, the number of anterior canines is smaller, and two of them project straight forward.

In both specimens the scales on the breast and belly are notably enlarged. The last scale bearing a lateral line tube is somewhat enlarged and produced backward into a point.

Head thick, its greatest width $\frac{1}{2}$ its length, and more than $\frac{1}{6}$ of total length to end of scales. Snout pointed, subconical, the anterior profile descending sharply from the interorbital space; length of snout $\frac{1}{5}$ of total to end of scales and twice diameter of eye. Mouth rather small, horizontal, its angle not reaching to vertical at front of eye; intermaxilla little protractile, upper lip double and closely concealing the jaw. Head with many small pores, of which there are 7 on each fork of the mandible. A row of five scales on the postorbital and suborbital bones; three scales on median line in front of the ventral; four scales across median line in front of dorsal, the one at the dorsal origin much the smallest.

Greatest depth of body $3\frac{3}{4}$ in total to end of scales; least height of caudal peduncle $\frac{1}{3}$ of greatest depth. Snout $\frac{1}{3}$ length of head. The dorsal begins over the upper axil of pectoral; the first spine is about $\frac{2}{9}$ length of head; the second spine is $\frac{1}{4}$ as long as the head; the last spine is a little longer than the second; all the spines are weak and flexible. The longest soft ray is $\frac{2}{7}$ length of head. Pectoral broad and somewhat falcate, its longest ray nearly $2\frac{1}{2}$ times as long as the shortest, and more than $\frac{1}{2}$ head, the fin reaching to the 8th scale of the lateral line and not much farther than the ventral. Ventral rather short, about equal to snout, and not reaching nearly to vent, a pointed sheath of scales extending on its base. Caudal almost truncate, short, about $\frac{1}{3}$ length of head.

Color in spirits, grayish brown above, pale below, all the fins pale, except caudal, which has traces of about six narrow dusky cross-bars in the smaller type, a black blotch on the pectoral at the upper axil and above a faint blue line; isthmus dusky; two narrow blue lines from eye to angle of mouth; iris pale yellow, except at top, where it is blackish crossed obliquely by a blue line; on the sides the dusky color is more or less interrupted, forming broken lines on three or four rows of scales below the lateral line.

193. *Sparisoma abildgaardii* (Bloch).

5378 No. 43. Near Hungry Bay. Aug. 29.

5379 No. 71. St. David's Id. Fish-pot. Sept. 6.

194. *Sparisoma aurofrenatum* (C. & V.).

5380 No. 42. Near Hungry Bay. Aug. 29.

195. *Sparisoma flavescens* (Bl. & Schn.).

5381 No. 70. St. David's Id. 2 spec. Fish-pot. Sept. 6.
 5383 No. 424. Red Bay, St. David's Id. Sept. 28.
 5384 No. 471. Jones Bay, Cooper's Id. 2 spec. Seine. Sept. 25.
 5385 No. 750. Smith's Id., St. George's. Seine. 2 spec. Oct. 17.
 5386 No. 786. Green Bay. Seine. Oct. 19.
 5387 No. 791. Cooper's Id. 2 spec. "Spanish Porgy." Oct. 24.
 5388 No. 792. Long Bird Id. Seine. 3 spec. "Spanish Porgy." Oct. 24.
 5389 No. 797. Green Bay. Seine. "Spanish Porgy." Oct. 19.
 5390 No. 801. Smith's Id., St. George's. Oct. 17.

196. *Sparisoma hoplomystax* (Cope). SPANISH PORGY.

4962 No. 124. Well Bay and Nonsuch Id. 8 young. Sept. 3.
 4963 No. 125. Well Bay, Cooper's Id. Eel-pot. Sept. 6.
 5382 No. 164. Nonsuch Bay. 3 young. Seine. Sept. 4.
 5377 No. 649. Old Ferry, St. George's. Seine. Sept. 23.
 5360 No. 656. Well Bay. Seine. 3 spec. Sept. 26.
 5362 No. 678. Nonsuch Bay. Seine. Sept. 26.
 5363 No. 687. Long Bay, Cooper's Id. Seine. 2 young. Sept. 25.
 5364 No. 697. Nonsuch Id. Young. Sept. 25.
 5365 No. 707. Packward's Bay. Seine. Sept. 23.
 5391 No. 784. Great Bay, St. David's Id. Seine. Sept. 18.
 5392 No. 788. Green Bay. Seine. 2 spec. Oct. 19.
 5393 No. 794. Long Bird Id. Seine. 2 spec. Oct. 24.
 5394 No. 818. Long Bird Id., south shore. 3 spec. Oct. 24.
 5395 No. 825. Red Bay, St. David's Id. 2 young. Oct. 27.
 5396 No. 831. Ely's Harbor. Seine. 3 spec. Sept. 20.
 5397 No. 846. Ely's Harbor. Seine. Sept. 20.

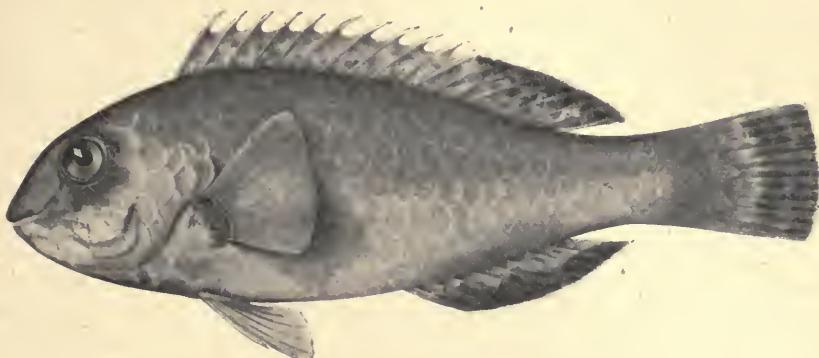
197. *Sparisoma radians* (C. & V.).

5358 No. 551. Nonsuch Bay. Seine. Sept. 29.
 5376 No. 588. Port Royal Bay. Seine. Sept. 21.
 5398 No. 862. Hayward's Bay, St. David's Id. 2 spec. Sept. 19.

198. *Sparisoma viride* (Bonnaterre). GREEN PARROT.

5399 No. 41. Near Hungry Bay. Aug. 29.

5400 No. 69. St. David's Id. Fish-pot. (Blue.) Sept. 6.

FIGURE 10. *SPARISOMA XYSTRODON* Jordan & Swain.199. *Sparisoma xystrodon* Jordan & Swain. MUD PARROT.

5352 No. 383. Long Bay, Somerset. 7 spec. Seine. Sept. 22.
 5353 No. 384. Long Bay. 10 spec. Seine. Sept. 22.
 5354 No. 385. Long Bay. 7 spec. Seine. Sept. 22.
 5355 No. 386. Long Bay. 2 spec. Seine. Sept. 22.
 5356 No. 407. Well Bay. Eel-pot. Oct. 5.
 5357 No. 535. Nonsuch Bay, north side. (Yellow belly.) Sept. 26.
 5357 No. 536. Nonsuch Bay, north side. (Black belly and tail.) Sept. 26.
 5359 No. 559. Ruth's Bay. Seine. 2 spec. (Blackchin.) Oct. 4.
 5361 No. 657. Well Bay. Seine. 5 spec. Sept. 26.
 5366 No. 743. Jones Bay, Cooper's Id. Under rocks. "Mud belly." Oct. 28.
 5367 No. 787. Green Bay. Seine. Oct. 19.
 5368 No. 793. Long Bird Id. Seine. 5 spec. Oct. 24.
 5369 No. 824. Red Bay, St. David's Id. Oct. 27.
 5370 No. 348. Great Shoal, Castle Harbor. Pot. Sept. 29.
 5371 No. 425. Red Bay. Young. Sept. 28.
 5372 No. 472. Jones Bay. 2 spec. Seine. Sept. 25.
 5373 No. 473. Jones Bay. 8 spec. Seine. Sept. 25.
 5374 No. 510. Wescott Bay. Seine. Sept. 25.
 5375 No. 560. Ruth's Bay. Seine. Young. Oct. 4.

CLXV. Family **Chaetodontidae**.200. *Chaetodon atenius* (Poey). BUTTERFLY FISH.

4940 No. 91. Harrington Sd. Fish-pot. 2 spec. Sept. 8.

4941 No. 336. Flatts, mouth of harbor. Oct. 7.

4942 No. 349. Trunk Id., Harrington Sd. Pot. Sept. 30.
Trunk Id., Bermuda. Coll. of Hist. Soc.

D. xii, 21; A. iii, 17; Scales in L. lat. ca. 30. Length 6 inches to end of middle caudal rays, head $1\frac{3}{4}$, ventral reaches to vent, pectoral $1\frac{1}{4}$ in. reaching nearly as far back as the ventrals do. A black ocular band narrower than the eye, extending to edge of subopercle, meeting in V-shape near the spinous dorsal origin. Interorbital space, top of snout, and the fins with much lemon-yellow; a dark ocellus larger than the eye on base of middle of spinous dorsal. A chain-like narrow dark penciling near lower margin of anal, and faint traces of pencilings on outer half of caudal rays; a minute dark point at tip of soft dorsal.

201. *Chætodon bricei* H. M. Smith.

4943 No. 63. Hungry Bay. 2 young. Dip-net. Aug. 30.

202. *Chætodon capistratus* Linnæus. FOUR-EYED FISH.

4944 No. 13. Hungry Bay. Aug. 24.

4945 No. 53. Off Hungry Bay. Aug. 29.

4946 No. 366. Long Bay, Somerset. Seine. Sept. 22.

4947 No. 465. Flatts. Oct. 20.

4948 No. 513. Trunk Id., Harrington Sd. Pot. Sept. 27.

4949 No. 918. Hungry Bay. Seine. 3 young. Nov. 7.

203. *Chætodon striatus* Linnæus.

4950 No. 52. Off Hungry Bay. Aug. 29.

204. *Angelichthys ciliaris* (Linnæus). ANGEL FISH.

4839 No. 44. Ten miles off Ireland Id. Fish-pot. Aug. 31.

4840 No. 90. The Flatts. Fish-pot. Sept. 8.

4841 No. 335. The Flatts. Fish-pot. Oct. 7.

4842 No. 485. Nonsuch Id. Young. Sept. 18.

No. 4842. Length $4\frac{5}{8}$ inches to base of middle caudal rays. No trace of blue bands anywhere. Blue ocellus on nape in front of dorsal larger than the eye. Spines on edge of preopercle strong, seven above the angle, the longest $\frac{1}{3}$ as long as the eye.

205. *Angelichthys formosus* (Castelnau). ANGEL FISH.

4843 No. 482. Nonsuch Id. Sept. 18.

4844 No. 483. Red Bay, St. Dávid's. Sept. 25.

4845 No. 484. St. George's. In pot, blackshell bait. Oct. 28.

No. 4845: Length $3\frac{3}{8}$ inches to base of middle caudal rays. D. xiv, 20; A. iii, 19; scales 9-48-23. Spines on posterior edge of preopercle only four, the longest less than $\frac{1}{5}$ length of eye.

A narrow blue band from throat passing in front of eye and meeting its fellow of the opposite (side) in a V shape on the nape. A narrow blue band from angle of preopercle to origin of dorsal, where it meets its fellow of the opposite side. Opercle with a blue edge. A narrow blue band beginning at the base of the 6th dorsal spine curving slightly forward and passing under about the middle of the pectoral. A similar band begins under the origin of the last dorsal spine and extends downward towards the root of the third anal spine. A third band running from the root of the 8th soft dorsal ray towards the middle of the soft portion of the anal fin. A narrow blue margin at top of spinous and soft dorsal extending backward almost to the tip of the soft dorsal. A similar blue maring on the anal. A bluish submarginal band on posterior part of soft dorsal and anal. Pectorals, ventrals, caudal, and tips of dorsal and anal whitish; a tinge of lemon-yellow on caudal.

This may be the young of *A. ciliaris*, but the truth cannot be determined without a larger series of specimens.

206. Holacanthus tricolor (Bloch). BLACK ANGEL FISH.

GOODE, Am. Jour Sci. Arts, xiv, Oct., 1877, 291.

CLXVII. Family **Teuthididae**.

207. Teuthis bahianus (Castelnau). DOCTOR FISH.

- 5440 No. 10. Hungry Bay. Aug. 24.
- 5441 No. 28. Ten miles off Ireland Id. 5 spec. Fish-pots. Aug. 25.
- 5442 No. 39. Near Hungry Bay. Aug. 29.
- 5443 No. 105. Nonsuch Id. 2 young. Sept. 3.
- 5444 No. 740. Jones Bay, Cooper's Id. 4 young. Oct. 28.
- 5445 No. 773. Cooper's Id., west side. 2 young. Oct. 25.
- 5446 No. 823. Red Bay, St. David's Id. Oct. 27.

208. Teuthis cœruleus (Bl. & Schn.). BLUE DOCTOR FISH.

- 5447 No. 29. Near Hungry Bay. 2 spec. Hook. Aug. 29.
- 5448 No. 103. Nonsuch Id. Young. Sept. 3.
- 5449 No. 162. Nonsuch Bay. Young. Seine. Sept. 4.

5450 No. 346. Great Shoal, Castle Harbor. Pot. Sept. 25.
 5451 No. 367. Long Bay, Somerset. Young. Seine. Sept. 22.
 5452 No. 476. Jones Bay. 4 young. Seine. Sept. 25.
 5453 No. 503. Wescott Bay. 3 young. Seine. Sept. 25.
 5454 No. 661. Wescott Bay. Young. Sept. 24.
 5455 No. 730. Castle Harbor, Cooper's Id. 2 spec. Oct. 25.

209. *Teuthis heliooides* Barbour. YELLOW DOCTOR.

5026 No. 1097. Mowbray coll.

210. *Teuthis hepatus* Linnæus. DOCTOR FISH.

5456 No. 104. Nonsuch Id. Young. Sept. 3.
 5457 No. 180. The Flatts. Fish-pot 2 spec. Sept. 8.
 5458 No. 301. The Flatts. Fish-pot. 3 spec. Sept. 8.
 5459 No. 475. Jones Bay. Seine. Young. Sept. 25.
 5460 No. 504. Wescott Bay. 4 young. Seine. Sept. 25.
 5461 No. 660. Wescott Bay. 3 young. Sept. 24.
 5462 No. 699. Nonsuch Id. Eel-pot. Sept. 25.

CLXIX. Family **Balistidae.**

211. *Balistes carolinensis* Gmelin. TURBOT.

4880 No. 89. The Flatts. Sept. 7.
 4881 No. 327. Ely's Harbor. Seine. Sept 20.
 4882 No. 404. Flatts. 2 young. In *Sargassum*. Oct. 10.
 4883 No. 804. The Reach, St. George's. Seine. Oct. 23.

212. *Balistes vetula* Linnæus. KING TURBOT; QUEEN TURBOT.

4884 No. 352. Off North Shore from Flatts. Oct. 2.
 4885 No. 870. North Shore, via St. George's. Oct. 25.

213. *Canthidermis maculatus* (Bloch). OCEAN TURBOT.

GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 290.

CLXX. Family **Monacanthidae.**

214. *Alutera schœppfi* (Walb.).

GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 290, as *Ceratacanthus aurantiacus*.

215. **Alutera scripta** (Osbeck).

GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 290, as *Alutarius scriptus*.
 BARBOUR, Bull. M. C. Z., XLVI, No. 7, 1905, 128.

216. **Monacanthus ciliatus** (Mitchill).

5182 No. 664. Wellman Bay, St. George's. Seine. Sept. 23.
 D. 25; A. 31; no hooks or filaments.

This has all the characters of *ciliatus* except the normal number of dorsal rays, and it appears to be a deformed individual. It will be observed that one example of No. 5201 has D. 28; A. 27.

5185 No. 142. Hayward's Bay. 2 young. Seine. Sept. 6.

5187 No. 666. Wellman Bay. Seine. Sept. 23.

D. 34; A. 33; filaments and hooks.

5189 No. 375. Long Bay, Somerset. 2 spec. Seine. Sept. 22.
 D. 30-31; A. 30.

5190 No. 456. Cove near Hunt's Bay, Port Royal Id. Seine.
 Sept. 21.

Deep dulap. D. 30; A. 29; strong hooks.

5191 No. 563. Long Bird Id. Seine. Sept. 30.

D. 29; A. 29.

5192 No. 574. Hunt's Bay. Seine. Sept. 2.

D. 32; A. 31; deep dulap.

5193 No. 596. Port Royal Bay. Seine. 16 spec. Sept. 21.
 Deep dulap in some. D. 29-31; A. 28-30.

5194 No. 663. Old Ferry bays, St. George's. 15 spec. Sept. 23.
 Hooks and filaments. D. 32; A. 31.

5195 No. 665. Wellman & Soldier Bays. 12 spec. Sept. 23.
 D. 31; A. 30.

5196 No. 712. Packward's Bay. Seine. 6 spec. Sept. 23.
 D. 30; A. 29; hooks.

5197 No. 719. Packward's Bay. Seine. 5 spec. Sept. 23.

5198 No. 731. Castle Harbor, Cooper's Id. Oct. 25.
 D. 30; A. 29; no hooks.

5199 No. 747. Smith's Id., St. George's. Seine. 7 spec.
 Oct. 17.

D. 31; A. 29; dorsal barbs very weak.

5200 No. 754. The Reach, St. George's. Seine. 12 spec.
 Oct. 23.

D. 32; A. 31; deep dulap; strong hooks.

5201 No. 755. The Reach. 41 spec. Oct. 23.

D. 32; A. 31; no hooks. One of these specimens has D. 28; A. 27.

5202 No. 795. Long Bird Id. Seine. Oct. 24.
 D. 31; A. 31; no hooks.
 5203 No. 819. Long Bird Id., south shore. 19 spec. Oct. 24.
 D. 30-31; A. 29-30.
 5204 No. 851. Ely's Harbor. Seine. 4 young. Sept. 20.

217. *Monacanthus hispidus* (Linnæus).

5188. No. 356. Flatts. Oct. 2.

The length of this example is $6\frac{1}{2}$ inches to caudal base. D. 32;
 A. 31.

218. *Monacanthus tuckeri* Bean.

BEAN, Proc. Biol. Soc. Wash., xix, Feb. 26, 1906, 33.

5183 No. 100. The Flatts. Young. Sept. 8.

D. 35; A. 34.

5184 No. 121. Well Bay. Sept. 8.

D. 35; A. 36.

5186 No. 376. Long Bay, Somerset. Sept. 22.

D. 35; A. 35.

In shape resembling young *Alutera*. D. 35; A. 34 to 36. Head 3 in total without caudal; depth at anal origin equal to head; least depth of caudal peduncle $2\frac{1}{3}$ in snout; eye $2\frac{1}{2}$ in snout, 3 in head. First dorsal spine nearly $\frac{1}{4}$ total without caudal, with two rows of strong barbs; second dorsal spine as long as the eye.

Color in spirits, dark brown; an irregular white pseudo-band on under surface of head, extending on body to over middle of anal base; in the largest example this marking resembles hieroglyphics; four narrow, dark bands on first dorsal spine and four on caudal fin.

Dedicated to the venerable George Tucker, M. A., archdeacon of Bermuda, for his devotion to biological science in the colony.



FIGURE 11. *MONACANTHUS TUCKERI* Bean.

CLXXI. Family **Ostraciidae.**219. **Lactophrys tricornis** (Linnæus). Cow Fish.

5152 No. 328. Ely's Harbor. Seine. Sept. 20.
 5153 No. 354. Jones Bay, Cooper's Id. Seine. Sept. 25.
 5154 No. 426. Near Red Bay. Seine. Sept. 28.
 5155 No. 468. Jones Bay. Seine. Sept. 25.
 5156 No. 829. Castle Harbor, St. David's Id. Mr. F. B. Spur-
 ling. Nov. 3.

220. **Lactophrys trigonus** (Linnæus). CUCKOLD.

5157 No. 20. Ten miles off Ireland Id. Fish-pot. Aug. 25.
 5158 No. 329. Ely's Harbor. Seine. Sept. 20.
 5159 No. 342. Wescott Bay, St. David's Id. Seine. Sept.
 25.
 5160 No. 427. Near Red Bay. Seine. Sept. 28.
 5161 No. 491. Nonsuch Id. "Buffalo Cow." Sept. 18.
 5162 No. 506. Wescott Bay. 2 spec. Seine. "Buffalo Cow."
 Sept. 25.
 5163 No. 667. Wellman Bay. Seine. "Buffalo Cow." Sept.
 23.

221. **Lactophrys triqueter** (L.).

EVERMANN & MARSH, Bull. U. S. F. C., 1900, 262.

CLXXII. Family **Tetraodontidae.**222. **Sphoeroides spengleri** (Bloch). PUFF FISH.

5401 No. 94. The Flatts. 5 young. Seine. Sept. 8.
 5402 No. 116. Well Bay, Cooper's Id. Seine. Sept. 6.
 5403 No. 119. Nonsuch Id. Seine. Sept. 3.
 5404 No. 141. Hayward's Bay, St. David's Id. 3 young.
 Seine. Sept. 6.
 5405 No. 175. Hayward's Bay. 4 spec. Seine. Sept. 6.
 5406 No. 179. The Flatts. Eel-pot. Sept. 8.
 5407 No. 303. The Flatts. Seine. Sept. 8.
 5408 No. 319. Smith's Cove, Hamilton. Seine. Sept. 9.
 5409 No. 374. Long Bay, Somerset. 2 spec. Seine. Sept. 22.
 5410 No. 645. Old Ferry, St. George's. 2 spec. Sept. 23.
 5411 No. 659. Well Bay, Cooper's Id. Seine. Sept. 26.

5412 No. 783. Great Bay, St. David's Id. Seine. 2 spec.
Sept. 18.
5413 No. 849. Ely's Harbor. Seine. Sept. 20.

CLXXIII. Family **Canthigasteridæ**.

223. **Canthigaster rostratus** (Bloch).

GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 290.

CLXXIV. Family **Diodontidæ**.

224. **Chilomycterus reticulatus** (L.) SEA PORCUPINE.

GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 290.

225. **Diodon hystrix** Linnæus. PORCUPINE FISH.

4975 No. 360. Flatts. Sept.

226. **Diodon novem-maculatus** Cuv.

GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 290.

CLXXV. Family **Molidae**.

227. **Mola mola** (L.). SUN FISH.

GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 290, as *Orthagoriscus mola*.

228. **Ranzania truncata** (Retzius).

JORDAN & EVERMANN, Bull. 47, U. S. Nat. Mus., 1898, 1755.
Once taken at the Bermudas.

CLXXVI. Family **Scorpænidæ**.

229. **Scorpæna agassizii** Goode & Bean. PRICKLY HIND
5330 No. 325. South of Castle Id. Hook. Oct. 4.

230. **Scorpæna plumieri** Bloch. PRICKLY HIND.

5331 No. 492. Off Gurnet Rock. Sept. 18.

5332 No. 865. Castle Harbor, Cooper's Id. Oct. 25.

231. **Pontinus** sp.

A fish of this genus, not yet determined, was taken in 90 fathoms off the South Shore by Louis Mowbray on Jan. 4, 1906.

CLXXXVI. Family **Cephalacanthidæ**.232. **Cephalacanthus volitans** (Linnæus).

4939 No. 490. St. George's. Sept. 18.

CLXXXVII. Family **Callionymidæ**.233. **Calionymus bermudarum** Barbour.

BARBOUR, Bull. M. C. Z., XLVI, No. 7, 1905, 129.

CLXXXVIII. Family **Gobiidæ**.234. **Rhinogobius glaucofrænum** (Gill).

5031 No. 764. Jones Bay, Cooper's Id. Under rocks. Oct. 25.

5032 No. 765. Jones Bay. Under rock. 3 spec. Oct. 28.

5033 No. 840. Ely's Harbor. Seine. Sept. 20.

D. vi, 10; A. 1, 10; scales 28.

This goby, which was originally credited to the Pacific Ocean, appears to be a common element of the West Indian fauna, having been found among the Florida Keys, in the Bahamas, and, recently, in Bermuda. Dr. Eigenmann examined 4 specimens from the Tortugas, Mr. Barton A. Bean reported 25 individuals obtained in a dredge in five fathoms of water off Governor's Harbor, Eleuthera Id., and the Field Museum Expedition to Bermuda in 1905 secured five examples at Cooper's Id. and Ely's Harbor in the shallows under rocks. These specimens range from $2\frac{1}{8}$ to $2\frac{1}{2}$ inches. The blue line across the cheek, so characteristic during life, has entirely disappeared in spirits. After the return of the expedition, Mr. Mowbray reported the fish common on the shoals near Cooper's Id.

235. **Rhinogobius mowbrayi** sp. nov.

5030 No. 908. Challenger Bank. 28 fms. Rock cavity. Oct. 12. Very small; mostly red, with 14 yellowish cross-bands.

This fish is related to *Mapo soporator*, but is distinguished by

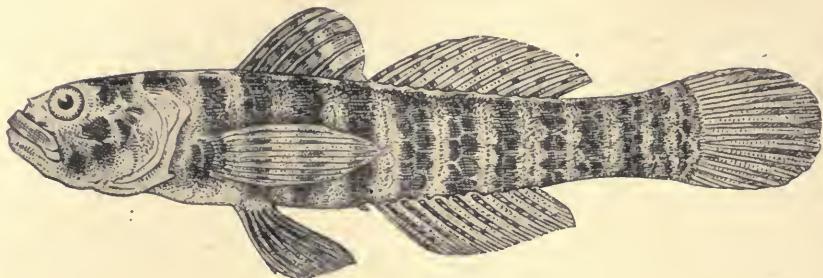


FIGURE 12. *RHINOGOBIUS MOWBRAYI*. Bean.
(About 5 times nat.)

its scaleless nape, which has a low keel on each side, scaleless breast, large incisors in the sides of lower jaw, and other characters. The keel on the nape is not a constant character, later examples not showing it.

On October 12, 1905, the Field Museum Expedition to Bermuda obtained a very small red goby from a fragment of coral rock brought up by the trawl on Challenger Bank in 30 fathoms. Owing to the small size and poor condition of this specimen, it is not used as the type of the species. Since that time Mr. Louis L. Mowbray has taken a larger, perfect example in Hungry Bay, and this is made the type which I dedicate to Mr. Mowbray in recognition of his intelligent and effective work in collecting Bermudian fishes.

This minute goby is red in life with thirteen or fourteen yellowish cross-bands, three of which are in advance of the spinous dorsal. In spirits the bands are brownish, and there is a rather broad orange band at base of caudal. An interrupted dusky band from eye across maxilla and mandible; two dusky bars downward from eye, and a bifurcate dusky bar across opercle; a large dark blotch at pectoral base and a smaller one on the subopercle and branchiostegal rays. Eye rather large, placed high, about equal to snout, and somewhat more than $\frac{1}{4}$ head. Mouth oblique, with projecting lower jaw. Maxilla scarcely extends behind front of eye; lips moderately developed. One large canine on each side of lower jaw and a smaller one behind it. Weaker canines in the upper jaw. Anterior nostril in a short, dark tube; posterior nostril close to eye and in a very short tube.

Total length of type $\frac{7}{8}$ inch; head $\frac{3}{16}$; depth scarcely more than $\frac{1}{2}$ of total with caudal. D. vi, 10; A. 9; scales about 7-26, strongly

ctenoid. The pectoral is pointed, elongate, reaching past anal origin. The ventral reaches as far back as the pectoral. None of the dorsal or anal rays produced. Caudal rather short, rounded. Nape apparently scaleless, with a low keel on each side. A small genital papilla.

236. *Mapo soporator* (C. & V.). MOLLY MILLER.

5034 No. 14. Hungry Bay. 5 spec. Aug. 24.
 5035 No. 17. Hungry Bay. Under rocks. 4 spec. Aug. 23.
 5036 No. 139. Hayward's Bay, St. David's Id. 3 spec. Sept. 6.
 5037 No. 501. Doe's Rock. Tide-pool. 2 spec. Oct. 26.
 5038 No. 540. Nonsuch Bay, north side. 3 spec. Sept. 26.
 5039 No. 777. Castle Harbor. Seine. 3 spec. Oct. 18.

237. *Gobius stigmaturus* Goode & Bean.

BARBOUR, Bull. M. C. Z., XLVI, No. 7, 1905, 130. One specimen.
 Hungry Bay. April, 1903.

CLXXXIX. Family **Echeneididae.**

238. *Echeneis naucrates* L. SUCK FISH.

GOODE, Am. Jour. Sci. Arts, XIV, Oct., 1877, 292, as *Leptecheneis naucrates*.

239. *Remora remora* (Linnæus). SHARK PILOT.

5294 No. 452. Argus Bank. 30 fms. From shark. Oct. 13.

CXC. Family **Malacanthidae.**

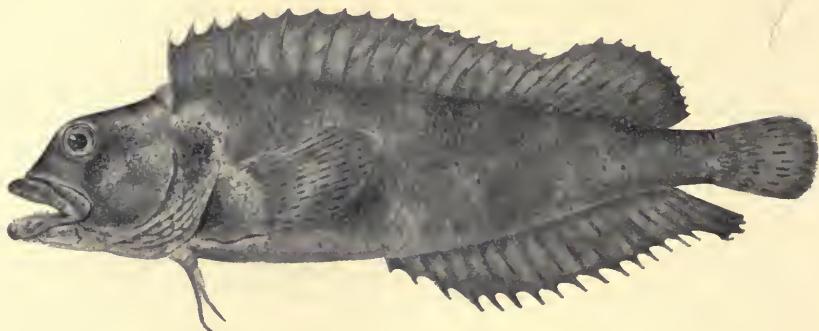
240. *Malacanthus plumieri* (Bloch). WHITEY.

5177 No. 344. Great Shoal, Castle Harbor. Fish-pot. Sept. 25.
 5178 No. 347. Great Shoal, Castle Harbor. Fish-pot. Sept. 29.
 D. VI, 55; A. 53.
 5179 No. 435. Two and a half miles south of Gurnet Rock.
 60 fms. Hook. Oct. 5.
 5180 No. 542. Nonsuch Id. Eel-pot. Oct. 4.

CC. Family **Blenniidae.**

241. *Labrisomus lentiginosus* Bean.

BEAN, Proc. Biol. Soc. Wash., xix, Feb. 26, 1906, 30.

FIGURE 13. *LABRISOMUS LENTIGINOSUS* Bean.

5142 No. 500. Doe's Rock. Oct. 26.

Associated with many individuals of *L. nuchipinnis* in tide-pools at Doe's Rock, Paget Parish, was found a single example of a blenny resembling that common species, but differing notably in color and in the length of the ventral.

The depth of the body is $\frac{1}{4}$ of the length to base of caudal; the head is nearly $\frac{1}{3}$ of the same length. The pectoral reaches to the vertical through the anal origin; the ventral is $\frac{1}{2}$ as long as the head and reaches scarcely more than half way to the vent (in *L. nuchipinnis* the ventral almost reaches to the vent). The eye equals the snout in length and is $\frac{2}{3}$ length of head. First dorsal spine $\frac{1}{4}$ length of head; tenth dorsal spine $\frac{2}{3}$ length of head; eighteenth spine not much longer than seventeenth, nearly $\frac{1}{3}$ as long as the head. Anterior nostril with a tufted barbel; posterior nostril with a very short tube; hair-like filaments above the orbit and on the nape as in *L. nuchipinnis*, but less developed.

Color in spirits: Pale yellow; the sides with four or five very faint irregular cross-bands of dull gray; head, especially cheeks and nape, profusely sprinkled with minute dark points; pectoral with about six or seven narrow, interrupted bands formed by dots on the rays; caudal with about six similar bands; no dark spot on front of spinous dorsal and none on opercle; soft dorsal and anal pale, mottled with darker, but without evident bands.

Length of the type, $4\frac{1}{2}$ inches (112 millimeters) to base of middle caudal rays.

242. ***Labrisomus nuchipinnis* (Quoy & Gaimard).** MOLLY MILLER.

5139 No. 84. Nonsuch Id. Hook. Sept. 3.

5140 No. 102. Nonsuch Id. Hook. Sept. 3.

5141 No. 493. Nonsuch Id. 2 spec. Sept. 18.
 5143 No. 519. Nonsuch Bay. Seine. Sept. 4.
 5144 No. 533. Nonsuch Bay, north side. Seine. Sept. 26.
 5145 No. 543. Nonsuch Id. Eel-pot. Oct. 4.
 5146 No. 568. Hunt's Bay, Port Royal. Seine. Sept. 21.
 5147 No. 694. Nonsuch Id. Sept. 25.
 5148 No. 739. Jones Bay, Cooper's Id. Under rocks. Oct. 28.
 5149 No. 768. Cooper's Id., west side. 7 spec. Oct. 25.
 5150 No. 779. Castle Harbor. Seine. 5 spec. Oct. 18.

No. 5147: D. xviii, 12; A. ii, 18; scales 8-68-15. Pectoral reaches to vertical through anal origin. Ventral more than $\frac{1}{2}$ head, reaching nearly to vent. First dorsal spine $\frac{1}{4}$ head. Tenth dorsal spine scarcely more than $\frac{1}{3}$ head. Eighteenth dorsal spine not much longer than seventeenth, $\frac{1}{3}$ head. Eye $\frac{2}{3}$ head, shorter than snout.

Length of specimen to base of middle caudal rays, $4\frac{1}{2}$ inches.

243. *Blennius cristatus* Linnæus. MOLLY MILLER.

4894 No. 498. Doe's Rock, south shore. Tide-pools. Many. Oct. 26.
 4895 No. 600. Flatts. 2 spec. Oct. 2.
 4896 No. 631. Near Flatts. Tide-pool. Oct. 18.
 4897 No. 878. James Bay, Paget East. 21 spec. Nov. 5.

244. *Salariichthys textilis* (Quoy & Gaimard). MOLLY MILLER.

5296 No. 78. Nonsuch Id. 2 spec. Aug.
 5297 No. 499. Doe's Rock, south shore. Tide-pools. 4 spec. Oct. 26.
 5298 No. 871. Nonsuch Id. Young. Oct. 26.
 5299 No. 880. James Bay. E. Lee. 35 spec. Nov. 5.

CCX. Family **Fierasferidae.**

245. *Fierasfer bermudensis* (Jones).

GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 291, as *Lefroyia bermudensis*.

CCXI. Family **Brotulidae.**

246. *Ogilbia cayorum* Evermann & Kendall.

5562 No. 1098. Near Coot Pond. L. Mowbray. Aug. 26, 1903.

A small individual of this very rare Brotulid was obtained by Mr. L. Mowbray and is now in the Field Museum. The example is not quite two inches long including caudal; it corresponds fully with the description published by Evermann and Kendall in Bull. U. S. F. C. 1897, 132, pl. 9, fig. 14.

The color in spirits is light brown, finely punctate with brown specks. The lateral line consists of two series of pores, the upper one, containing about 12 pores, starts slightly above the opercular spine and runs back not so far as the vertical through the vent; the second is on a lower level and extends toward the caudal base, but is gradually lost.

247. *Brotula barbata* (Bl. & Schn.).

GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 291.

248. *Brosmophycis verrilli* Garman.

BARBOUR, Bull. M. C. Z., xlvi, No. 7, 1905, 131.

CCXVI. Family **Regalecidae.**

249. *Regalecus glesne* (Ascanius).

GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 292, as *Regalecus gladius*.

CCXIX. Family **Pleuronectidae.**

250. *Platophrys lunatus* (Linnaeus). PLATE FISH.

5272 No. 88. Nonsuch Id. Seine. Sept. 3.

5273 No. 415. Well Bay, Cooper's Id. Seine. Sept. 26.

5274 No. 434. Castle Harbor. Sept. 30.

251. *Platophrys ocellatus* (Agassiz). PLATE FISH.

5275 No. 157. Well Bay, Cooper's Id. Seine. Sept. 5.

5276 No. 520. Nonsuch Bay. Seine. 4 spec. Oct. 4.

5277 No. 680. Nonsuch Bay. Seine. Sept. 26.

5278 No. 684. Long Bay, Cooper's Id. Seine. Young. Sept. 25.

5279 No. 716. Cable Bay, Tucker's Town. Seine. Young. Sept. 26.

252. **Syacium micrurum** Ranz.

GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 291, as *Hemirhombus aramaca*.

253. **Syacium papillosum** (L.).

GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 291, as *Hemirhombus soleiformis*.

CCXXII. Family **Antennariidae**.254. **Antennarius nuttingii** Garman. TOAD FISH.

4851 No. 929. The Reach, St. George's. L. Mowbray. March 20, 1903.

A beautiful example of this species was obtained from M. L. Mowbray, who collected it in The Reach, St. George's Id., March 20, 1903. It is $2\frac{3}{4}$ inches long to base of middle caudal rays. The first dorsal spine has four narrow white rings on its upper half. The "bait" is white and well developed. The spinules in the skin are nearly all bifid.

In the Key to *Antennarius* in Bull. 47, U. S. N. M., p. 2718, it is stated that the inside of the mouth of *A. nuttingii* is white, but by reference to the fish or to Garman's description, on p. 2724 of the same Bulletin, it will be found that the inside of the mouth is black.

255. **Antennarius scaber** (Cuv.). TOAD FISH.

4852 No. 927. The Reach, St. George's. L. Mowbray. Sept. 14, 1904.

D. 111, 12; A. 7; spinules mostly bifid, but sometimes trifid, and extending upon all the fins. Both nostrils tubular, but the anterior tube the longer.

In this individual, which is $4\frac{1}{4}$ inches long to base of middle caudal rays, the caudal, ventral, and pectoral fins are covered with small roundish dark spots; the soft dorsal has about three rows of dark spots, the lowermost row containing three spots, which are larger than the eye; the anal fin is almost banded with dark spots and blotches; the lower anterior half of the soft dorsal has a series of long, dark brown blotches extending downward upon the back; the body and head are marbled with dark brown streaks and blotches; the belly has numerous small, brownish spots, none of them as big as the eye. Pupil blue; iris dark slaty.

FIGURE 14. *ANTENNARIUS VERRUCOSUS* Bean.256. *Antennarius verrucosus* Bean. TOAD FISH.

BEAN, Proc. Biol. Soc. Wash., xix, Feb. 26, 1906, 31.

4853 No. 928. The Reach, St. George's. L. Mowbray. 1904.

D. III, 12; A. 7; P. 10; v. 6. First dorsal spine long and slender, extending to base of third spine; "bait" not present, and no doubt accidentally lost. Second spine free; third spine firmly joined by its membrane to skin of back and held in a recumbent position. What remains of the first spine is nearly as long as the upper jaw. The second spine is $\frac{1}{3}$ as long as the upper jaw. The third spine is about twice as long as the second. The caudal fin is as long as the intermaxilla. The longest dorsal ray is little more than half as long as the caudal.

The body and fins are everywhere rough, but the prickles are small; on the sides, back, and belly in front of the ventrals are many roundish raised clusters of spinules, forming distinct elevations.

The mouth is almost vertical along the line of the intermaxilla; the upper jaw equals the distance from the pectoral to the vent. Eye small, only about $\frac{1}{6}$ length of upper jaw and $\frac{1}{4}$ width of interorbital space.

Color in spirits: Pale yellowish; inside of mouth whitish; head and body irregularly mottled with dots and lines of brownish; soft dorsal with about four small, roundish, ocellated dark spots, none of them quite as large as the eye; a diffuse dusky blotch on rays of soft dorsal, extending downward on the back, where it encloses a darker nucleus almost cross-shaped on the right side, and resembling the upper part of a figure 3 on the left side; caudal of left side with ten small irregular

dark spots, besides a few smaller ones; spots similar, but not so numerous on right side; an ocellated oblong dark spot on the anal fin, besides several much smaller spots; about eight small dark spots at bases of pectoral rays; a dusky patch under each pectoral fin, as long as the upper jaw, and in width about $\frac{1}{3}$ of its length; a smaller, diffuse blotch in front of the vent; belly behind ventrals with a few very small dark points.

The length of the example without caudal fin is $3\frac{3}{4}$ inches.

257. *Antennarius principis* (C. & V.).

GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 290, as *Pterophryne principis*.

258. *Antennarius stellifer* Barbour.

BARBOUR, Bull. M. C. Z., XLVI, No. 7, 1905, 132, pl. 4.

259. *Antennarius radiosus* Garman.

A specimen of this species was presented to the U. S. National Museum by Mr. F. Goodwin Gosling who collected it in Bermuda. It is number 50000 of the National Museum catalogue of fishes.

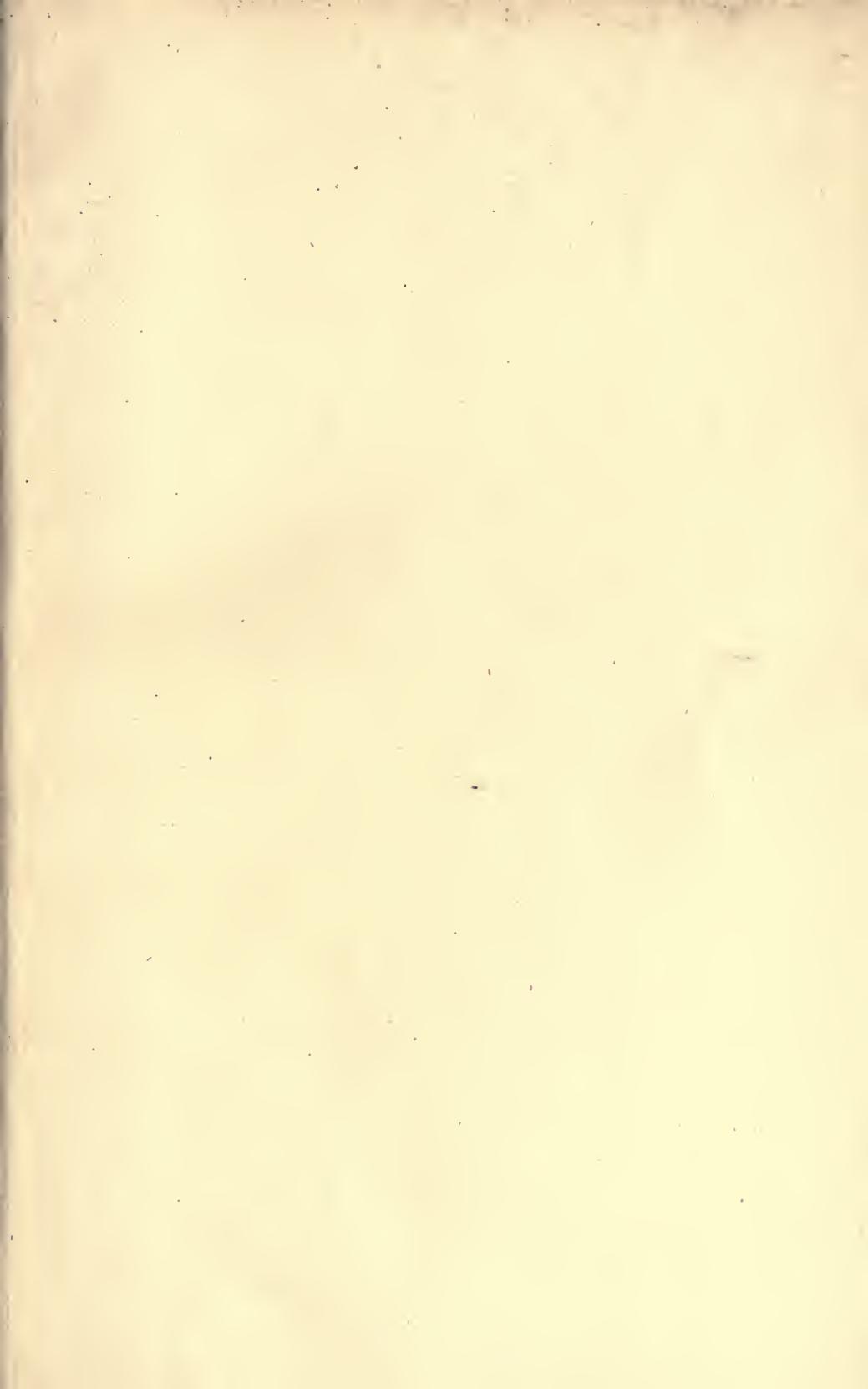
The specimen is $2\frac{3}{4}$ inches long including the caudal. The "bait" is trifid, one branch pale and longer than the other two which are short and dark. The dark ocellus under the soft dorsal is slightly longer than the eye, its width equal to the length of the eye.

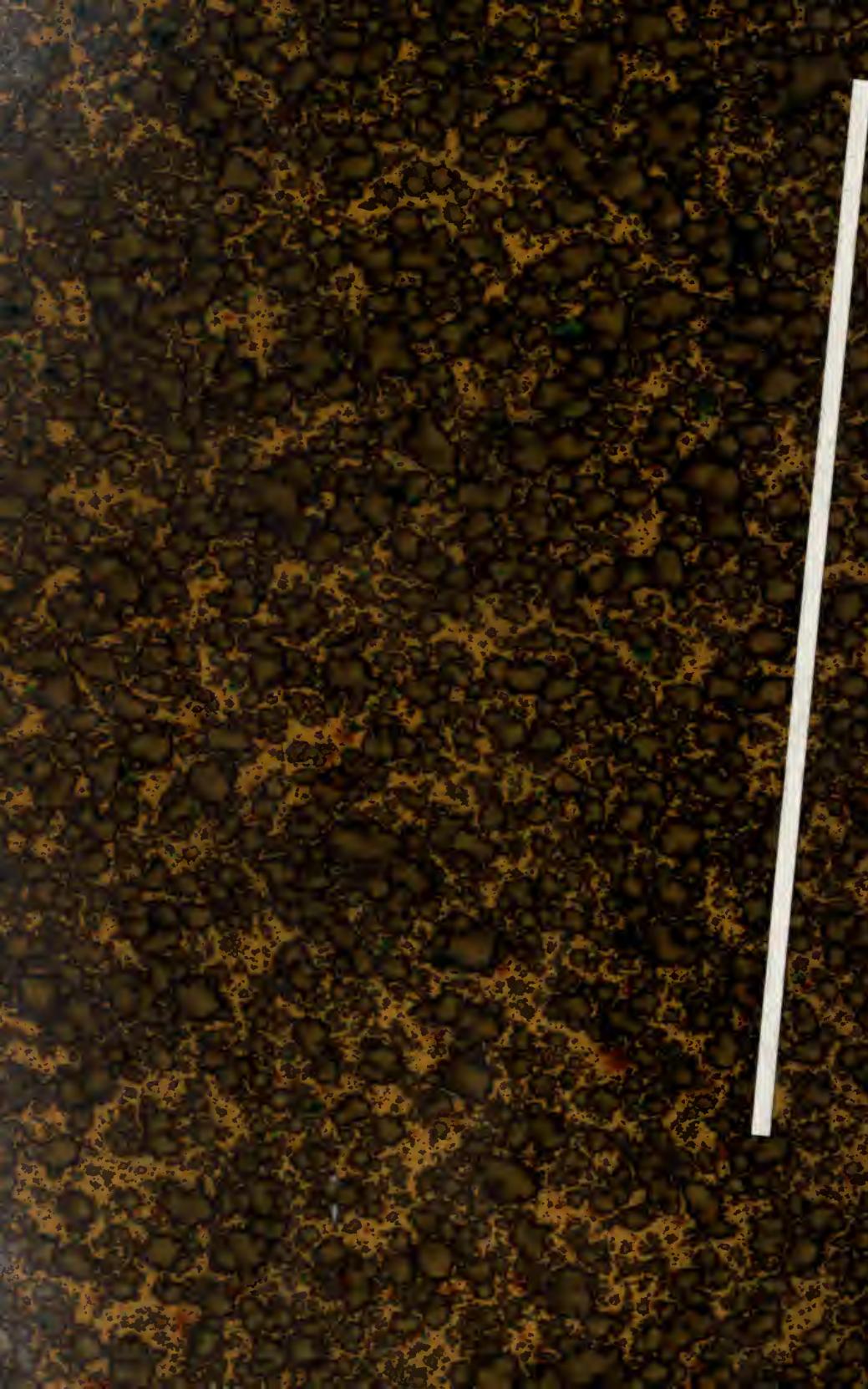
260. *Pterophryne gibba* (Mitchill). TOAD FISH; MOUSE FISH.

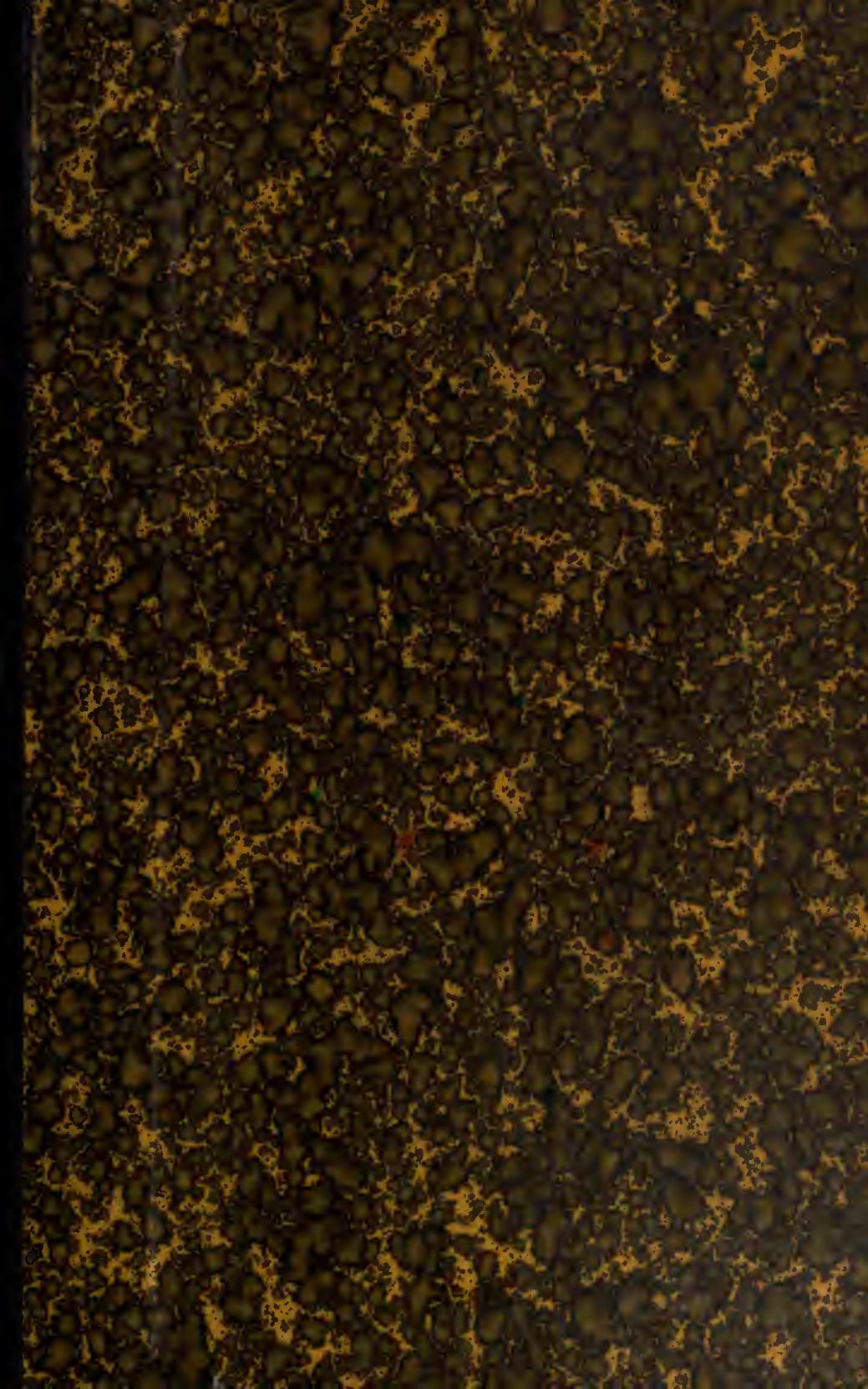
- 5290 No. 129. Off North Shore. Under *Sargassum*. Sept. 9.
- 5291 No. 403. Flatts. Under *Sargassum*. Oct. 10.
- 5292 No. 736. Jones Bay, Cooper's Id. Under rock. Oct. 28.
- 5293 No. 850. Ely's Harbor. Seine. Sept. 20.

261. *Pterophryne histrio* (Linnæus). DEVIL FISH.

GOODE, Am. Jour. Sci. Arts, xiv, Oct., 1877, 290, as *Pterophryne picta*.







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